MAGNAVOX

SERVICE MANUAL

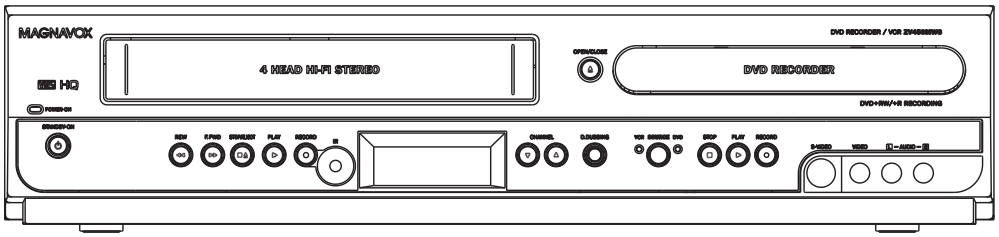
Main Section
- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's
- Exploded Views
- Parts List

When servicing the deck mechanism, refer to MK14 Deck Mechanism Section.

Deck Mechanism Part No.: N2460FL

DVD RECORDER & VIDEO CASSETTE RECORDER

ZV450MW8



IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

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MAIN SECTION

DVD RECORDER & VIDEO CASSETTE RECORDER

ZV450MW8

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- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**
- **Exploded Views**
- **Parts List**

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SPECIFICATIONS

< VCR Section >

Description	Unit	Minimum	Nominal	Maximum	Remark
1. Video					
1-1. Video Output (PB)	Vp-p	0.8	1.0	1.2	SP Mode
1-2. Video Output (R/P)	Vp-p	0.8	1.0	1.2	
1-3. Video S/N Y (R/P)	dB	40	45		SP Mode, W/O Burst
1-4. Video Color S/N AM (R/P)	dB	37	41		SP Mode
1-5. Video Color S/N PM (R/P)	dB	30	36		SP Mode
1-6. Resolution (PB)	Line	230	245		SP Mode
2. Servo					
2-1. Jitter Low	µsec		0.07	0.12	SP Mode
2-2. Wow & Flutter	%		0.3	0.5	SP Mode
3. Normal Audio					
3-1. Output (PB)	dBV	-9	-6	-3	SP Mode
3-2. Output (R/P)	dBV	-9	-6	-1.5	SP Mode
3-3. S/N (R/P)	dB	36	41		SP Mode
3-4. Distortion (R/P)	%		1.0	4.0	SP Mode
3-5. Freq. resp (R/P) at 200Hz	dB	-11	-4		SP Mode
(-20dB ref. 1kHz) at 8kHz	dB	-14	-4		SP Mode
4. Tuner					
4-1. Video output	Vp-p	0.8	1.0	1.2	E-E Mode
4-2. Video S/N	dB	39	42		E-E Mode
4-3. Audio output	dB	-10	-6	-2	E-E Mode
4-4. Audio S/N	dB	40	46		E-E Mode
5. Hi-Fi Audio					
5-1. Output	dBV	-12	-8	-4	SP Mode
5-2. Dynamic Range	dB	70	85		SP Mode
5-3. Freq. resp (6dB B.W)	Hz		20 ~ 20K		SP Mode

Note: Nominal specs represent the design specs. All units should be able to approximate these – some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; In no case should a unit fail to meet limit specs.

< DVD Section >

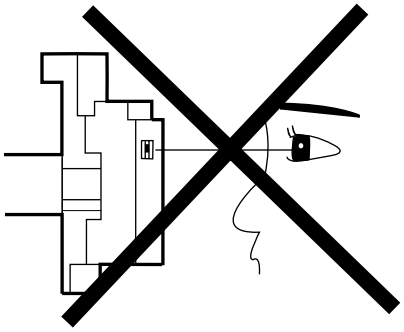
ITEM	CONDITIONS	UNIT	NOMINAL	LIMIT
1. VIDEO				
1-1. Video Output	75 ohm load	Vp-p	1.0	
1-2. S-Video Output				
Y (Luminance)	75 ohm load	Vp-p	1.0	
C (Chrominance)	75 ohm load	Vp-p	0.286	
1-3. Component Output				
Y (Luminance)	75 ohm load	Vp-p	0.549	
Cb (Chrominance)	75 ohm load	Vp-p	0.525	
Cr (Chrominance)	75 ohm load	Vp-p	0.525	
2. AUDIO				
2-1. Output Level		Vrms	2.0	
2-2. Frequency Response				
DVD-VIDEO LPCM	fs = 48kHz 20~22kHz	dB	± 0.5	
Audio CD	fs = 44.1kHz 20~20 kHz	dB	± 0.5	
2-3. Signal/Noise Ratio				
DVD-VIDEO LPCM		dB	90	
CD		dB	90	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	dB	80	
2-4. Dynamic Range				
DVD-VIDEO LPCM		dB	80	
CD		dB	80	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	dB	80	
2-5. THD+N	1 kHz, 0 dB			
DVD-VIDEO LPCM		%	0.01	
CD		%	0.01	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	%	0.01	

NOTES:

1. All Items are measured without pre-emphasis unless otherwise specified.
2. Power supply : AC120 V 60 Hz
4. Ambient temperature : 5 °C ~ 40 °C

LASER BEAM SAFETY PRECAUTIONS

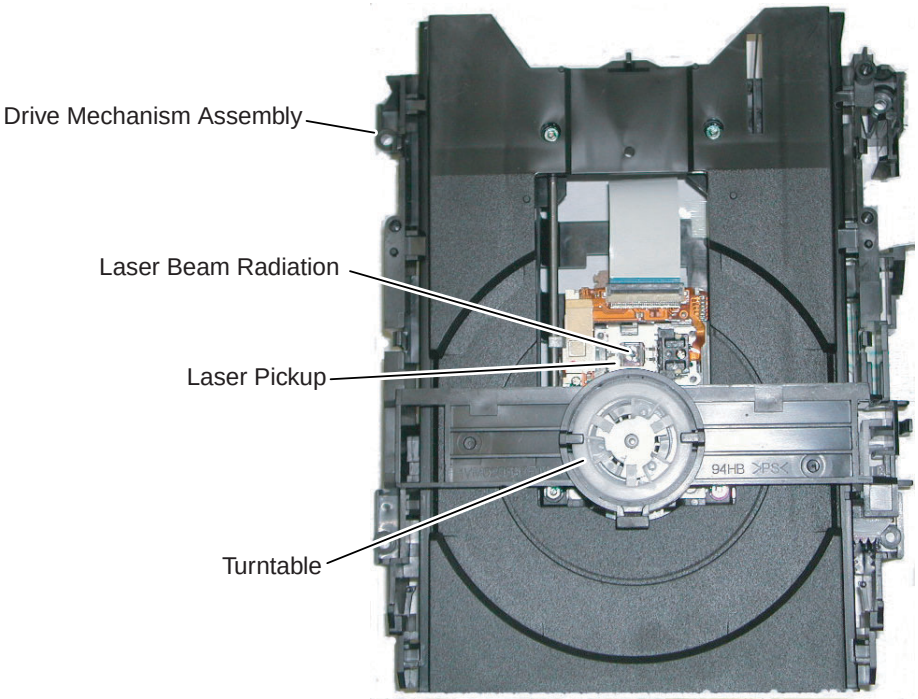
This DVD player uses a pickup that emits a laser beam.

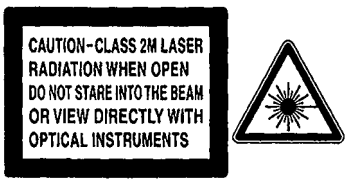


Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.





Location: Inside Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements. Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:
1) Insulation tape
2) PVC tubing
3) Spacers
4) Insulators for transistors

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).

G. Check that replaced wires do not contact sharp edges or pointed parts.

H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure
1) Remove the old connector by cutting the wires at a point close to the connector.
Important: Do not re-use a connector. (Discard it.)
2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
4) Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Clearance Distance (d), (d')
120 V	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

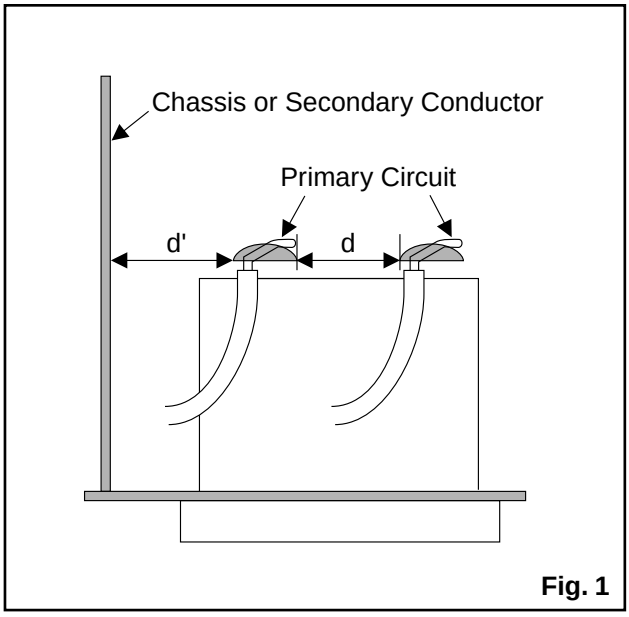


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON):

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

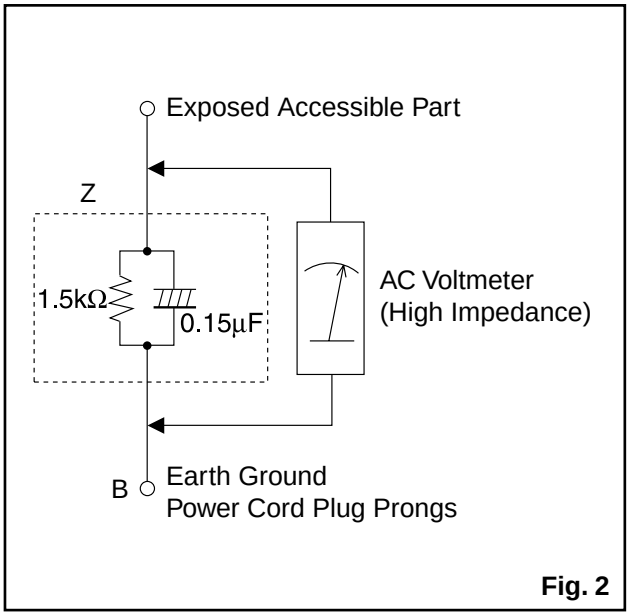


Fig. 2

Table 2: Leakage current ratings for selected areas

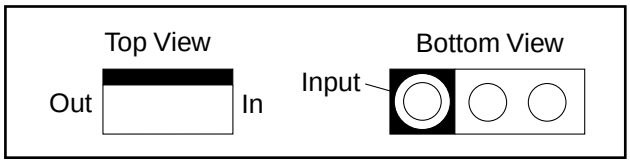
AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
120 V	0.15 μF CAP. & 1.5 kΩ RES. Connected in parallel	i ≤ 0.5 mA Peak	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

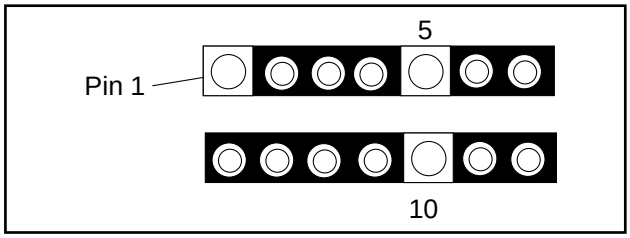
STANDARD NOTES FOR SERVICING

Circuit Board Indications

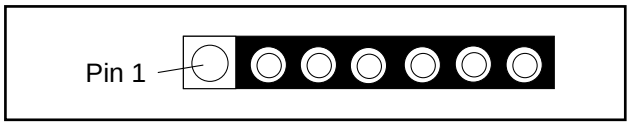
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

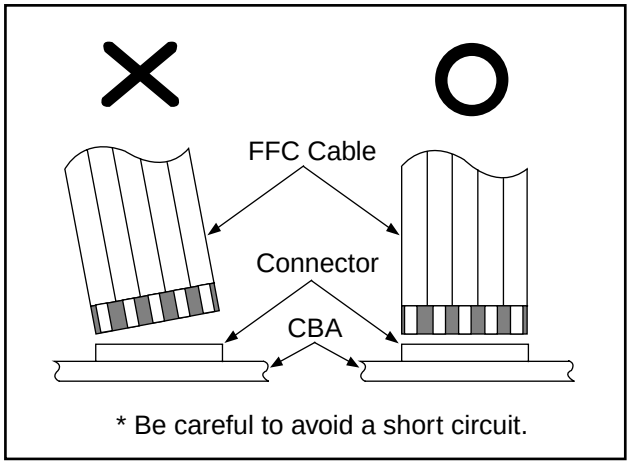


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

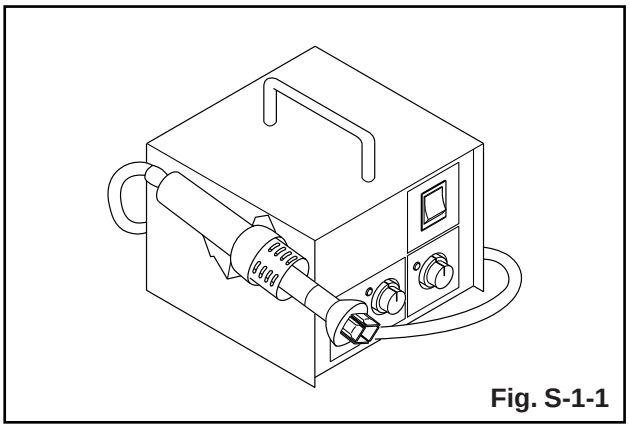


Fig. S-1-1

2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

3. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

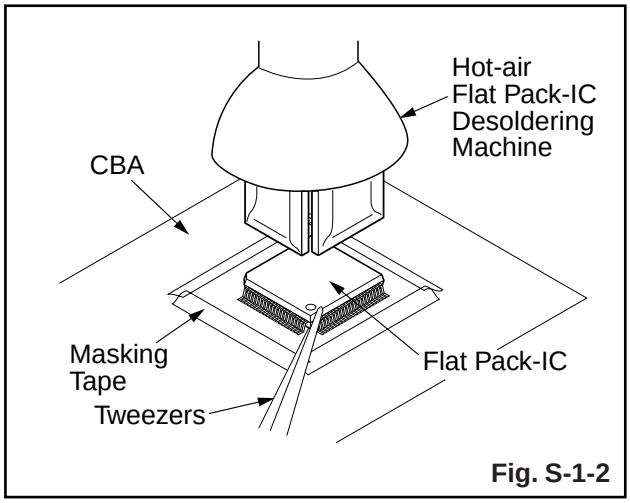


Fig. S-1-2

With Soldering Iron:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

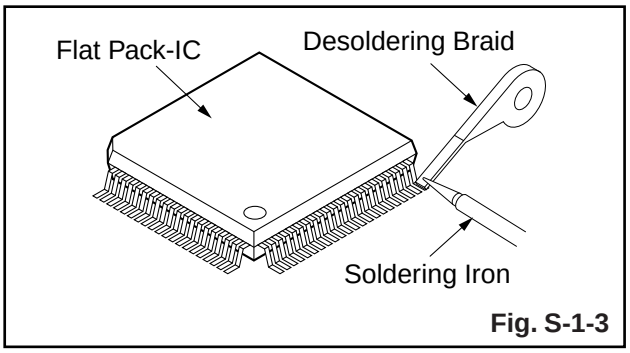


Fig. S-1-3

2. Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

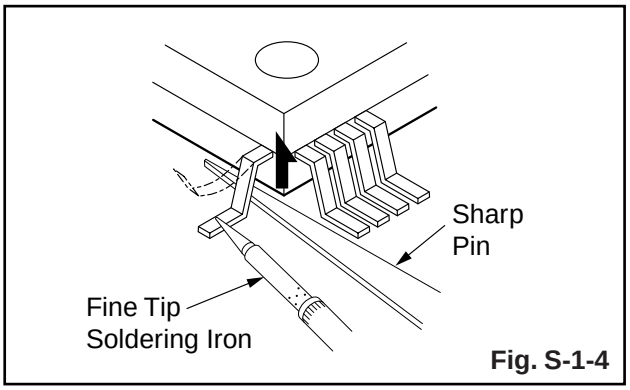


Fig. S-1-4

3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

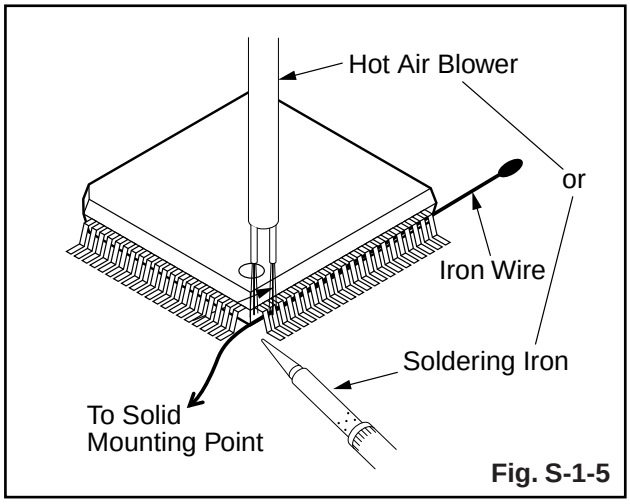


Fig. S-1-5

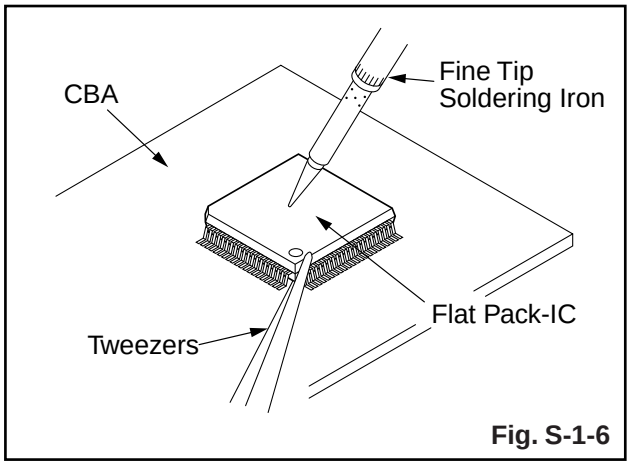


Fig. S-1-6

2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

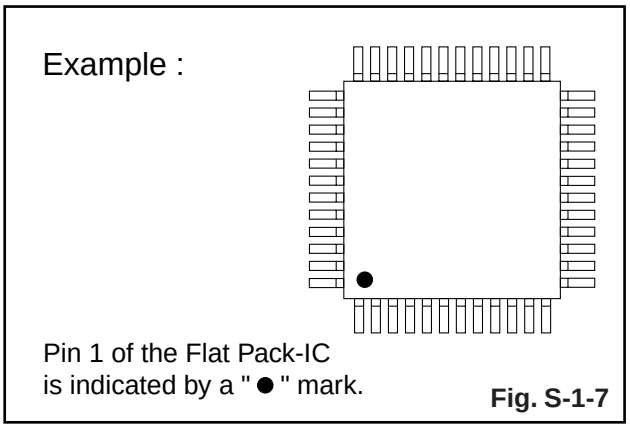


Fig. S-1-7

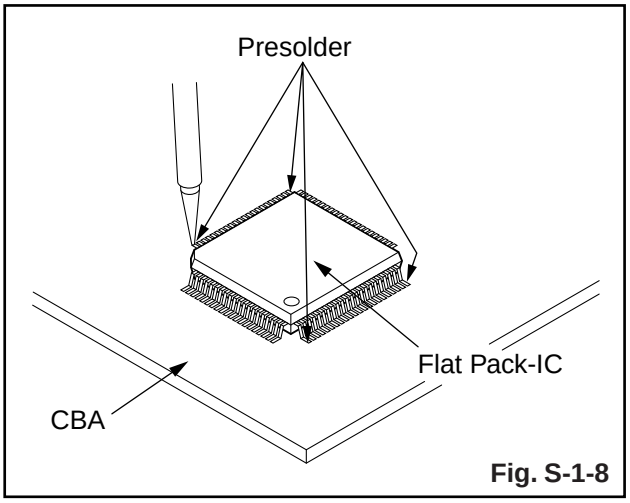


Fig. S-1-8

Instructions for Handling Semi-conductors

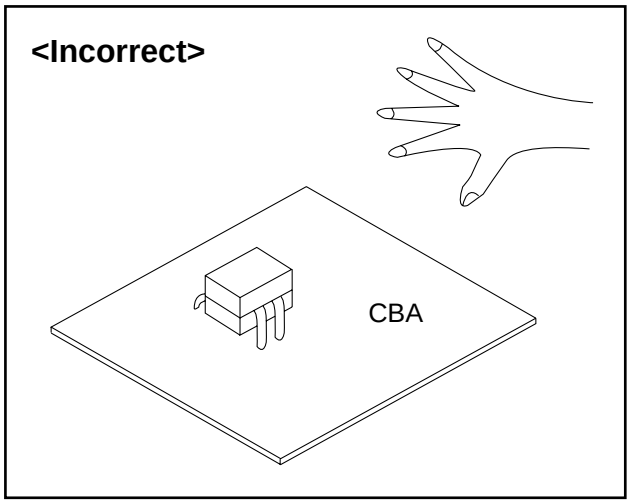
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

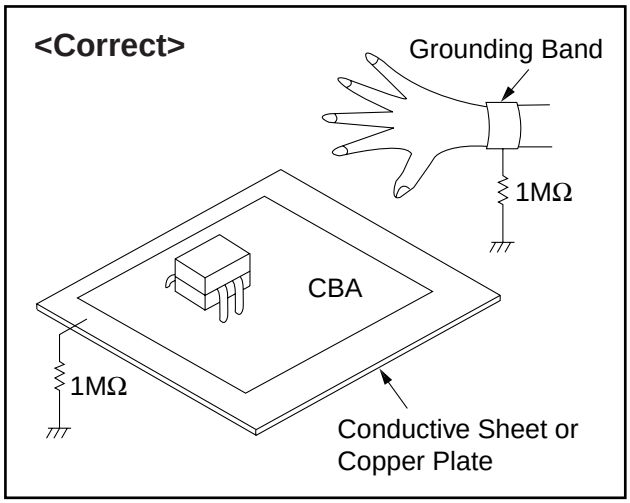
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.





PREPARATION FOR SERVICING

How to Enter the Service Mode

About Optical Sensors

Caution:

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

What to do for preparation

Insert a tape into the Deck Mechanism Assembly and press the PLAY button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, connect TP502 (S-INH) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

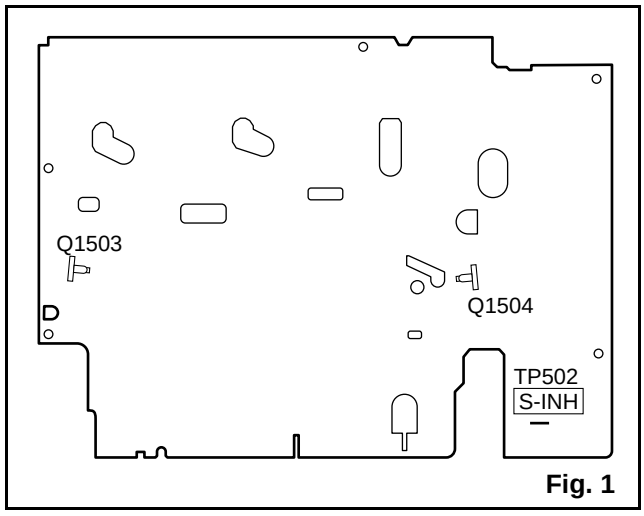


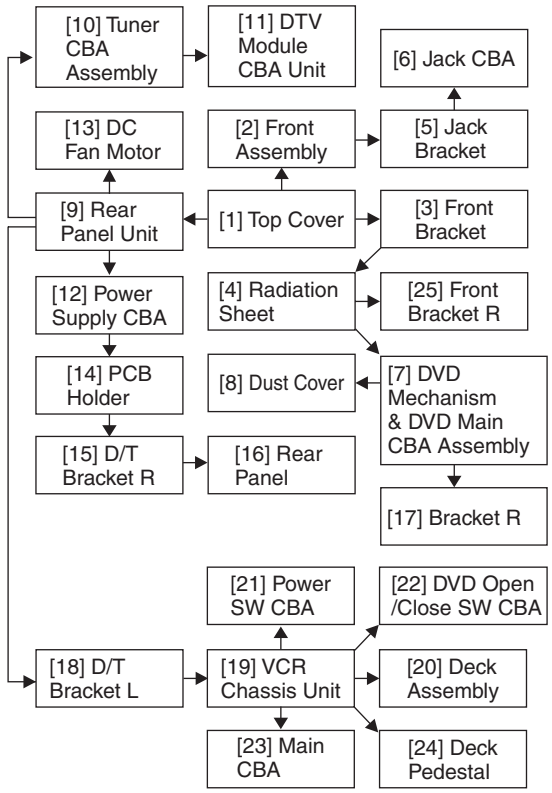
Fig. 1

Note: Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Top Cover	D1	6(S-1)	---
[2]	Front Assembly	D2	*5(L-1), *3(L-2), *CN1609	1 1-1 1-2 1-3
[3]	Front Bracket	D2	2(S-2), (S-3)	---
[4]	Radiation Sheet	D2	----------	---
[5]	Jack Bracket	D3	2(S-4)	---
[6]	Jack CBA	D3	Jack Earth Plate	---
[7]	DVD Mechanism & DVD Main CBA Assembly	D4	2(S-5A), 2(S-5B), *CN101, *CN701, *CN502	---
[8]	Dust Cover	D4	----------	---
[9]	Rear Panel Unit	D5	6(S-6), 3(S-7), (S-8), *CN101, *CN1102	---
[10]	Tuner CBA Assembly	D5	4(S-9), CN2610, CN2611	---
[11]	DTV Module CBA Unit	D5	CN5005	---
[12]	Power Supply CBA	D6	4(S-10), AC Cord	---
[13]	DC Fan Motor	D6	2(S-11), Earth Plate	---
[14]	PCB Holder	D6	3(S-12)	---
[15]	D/T Bracket R	D6	2(S-13)	---
[16]	Rear Panel	D6	----------	---
[17]	Bracket R	D7	2(S-14)	---
[18]	D/T Bracket L	D7	(S-15)	
[19]	VCR Chassis Unit	D7	5(S-16), 5(S-17), (S-18), (S-19)	---
[20]	Deck Assembly	D8	(S-20), (S-21), Desolder	2 3
[21]	Power SW CBA	D8	Desolder	---
[22]	DVD Open/ Close SW CBA	D8	Desolder	---
[23]	Main CBA	D8	----------	---
[24]	Deck Pedestal	D9	8(S-22)	---
[25]	Front Bracket R	D9	(S-23)	---

(1) (2) (3) (4) (5)

Note:

(1): Identification (location) No. of parts in the figures

(2): Name of the part

(3): Figure Number for reference

(4): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, L=Locking Tab, S=Screw,
CN=Connector
*=Unhook, Unlock, Release, Unplug, or Desolder
e.g. 6(S-1) = six Screws (S-1),
5(L-1) = five Locking Tabs (L-1)

(5): Refer to “Reference Notes.”

Reference Notes

CAUTION 1: Locking Tabs (L-1) and (L-2) are fragile. Be careful not to break them.

1-1. Release five Locking Tabs (L-1).

1-2. Release three Locking Tabs (L-2)

1-3. Disconnect Connector (CN1609), and remove the Front Assembly.

2. When reassembling, solder wire jumpers as shown in Fig. D8.

3. Before installing the Deck Assembly, be sure to place the pin of LD-SW on Main CBA as shown in Fig. D8. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. D8.

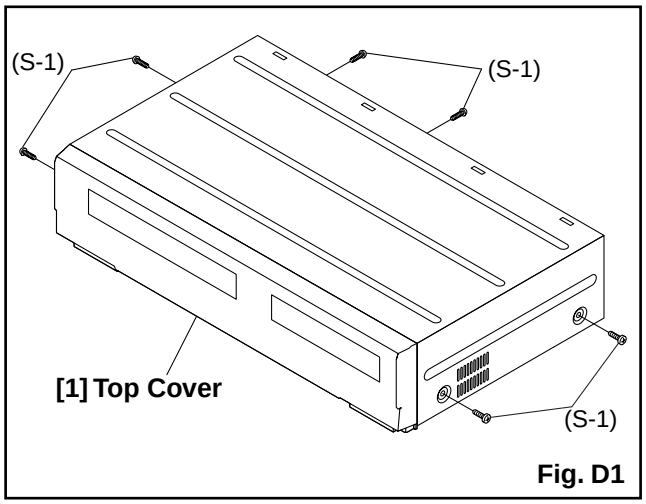


Fig. D1

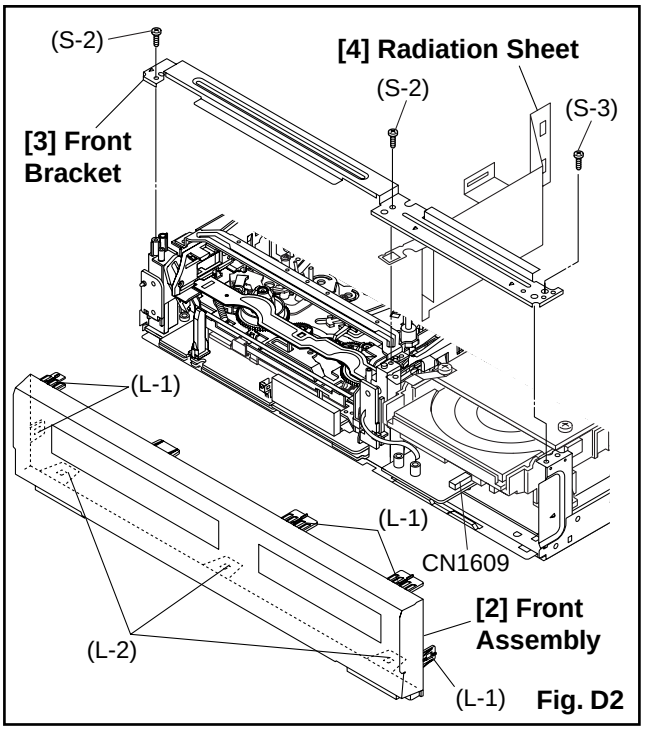


Fig. D2

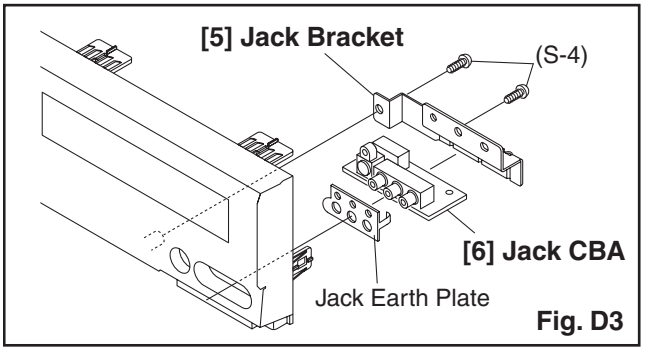


Fig. D3

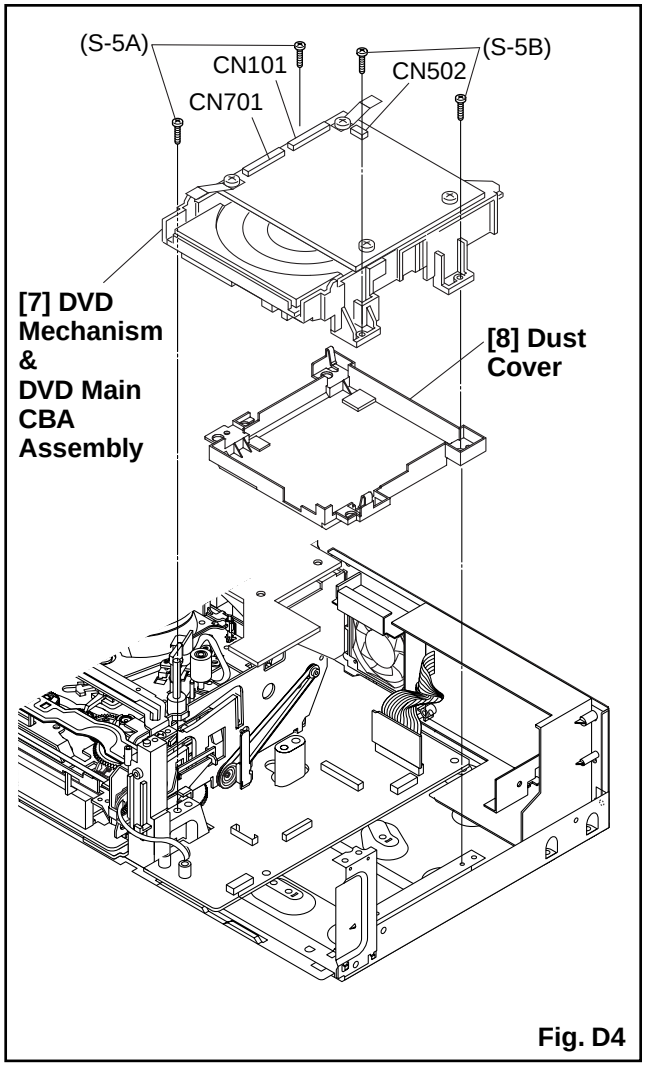

(S-5A)
CN101
CN502
(S-5B)
CN701
[7] DVD Mechanism & DVD Main CBA Assembly
[8] Dust Cover

Fig. D4

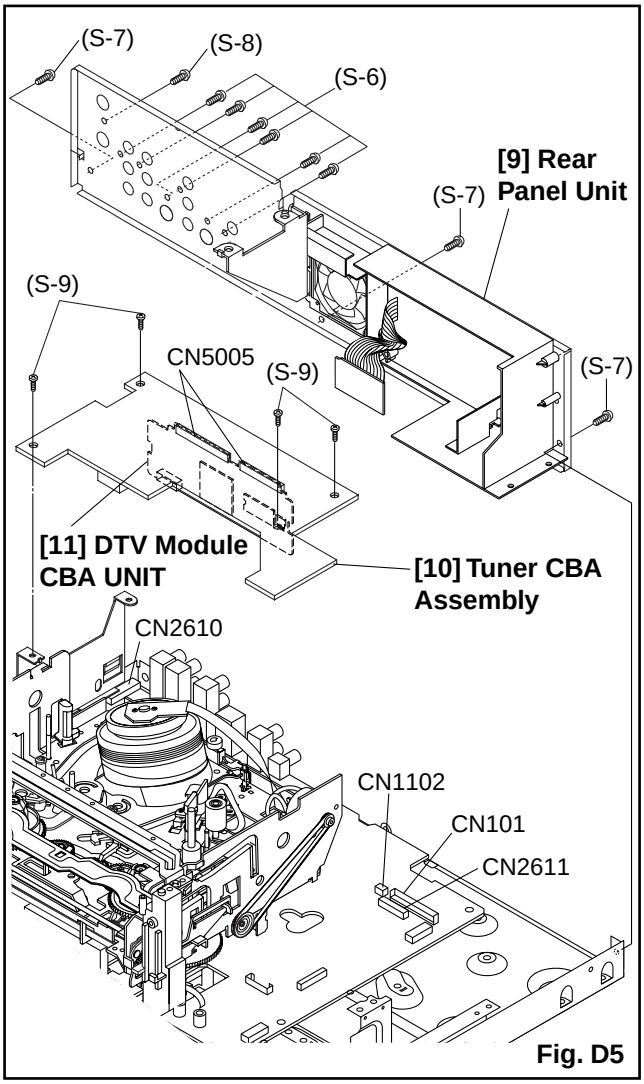

(S-7)
(S-8)
(S-6)
[9] Rear Panel Unit
(S-7)
(S-9)
CN5005
(S-9)
(S-7)
[11] DTV Module CBA UNIT
[10] Tuner CBA Assembly
CN2610
CN1102
CN101
CN2611

Fig. D5

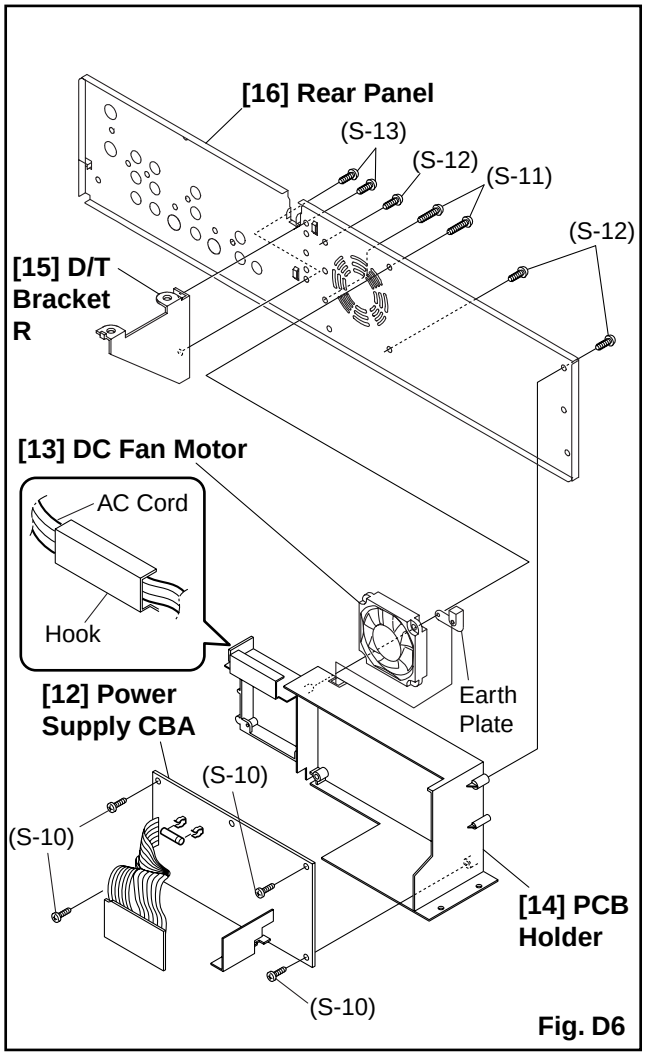

[16] Rear Panel
(S-13)
(S-12)
(S-11)
(S-12)
[15] D/T Bracket R
[13] DC Fan Motor
AC Cord
Hook
[12] Power Supply CBA
Earth Plate
(S-10)
(S-10)
(S-10)
[14] PCB Holder

Fig. D6

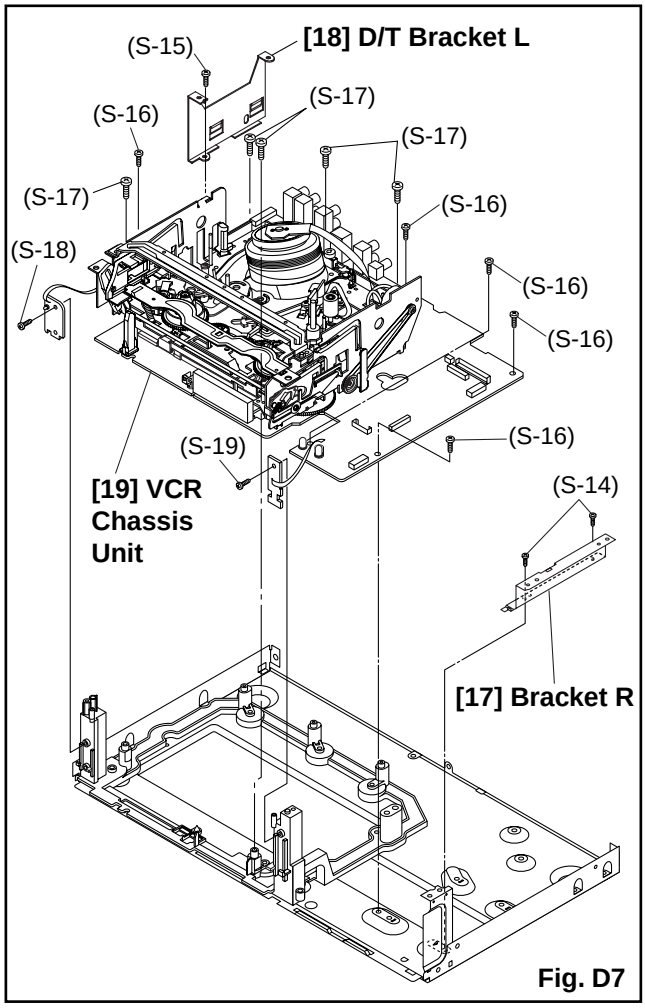
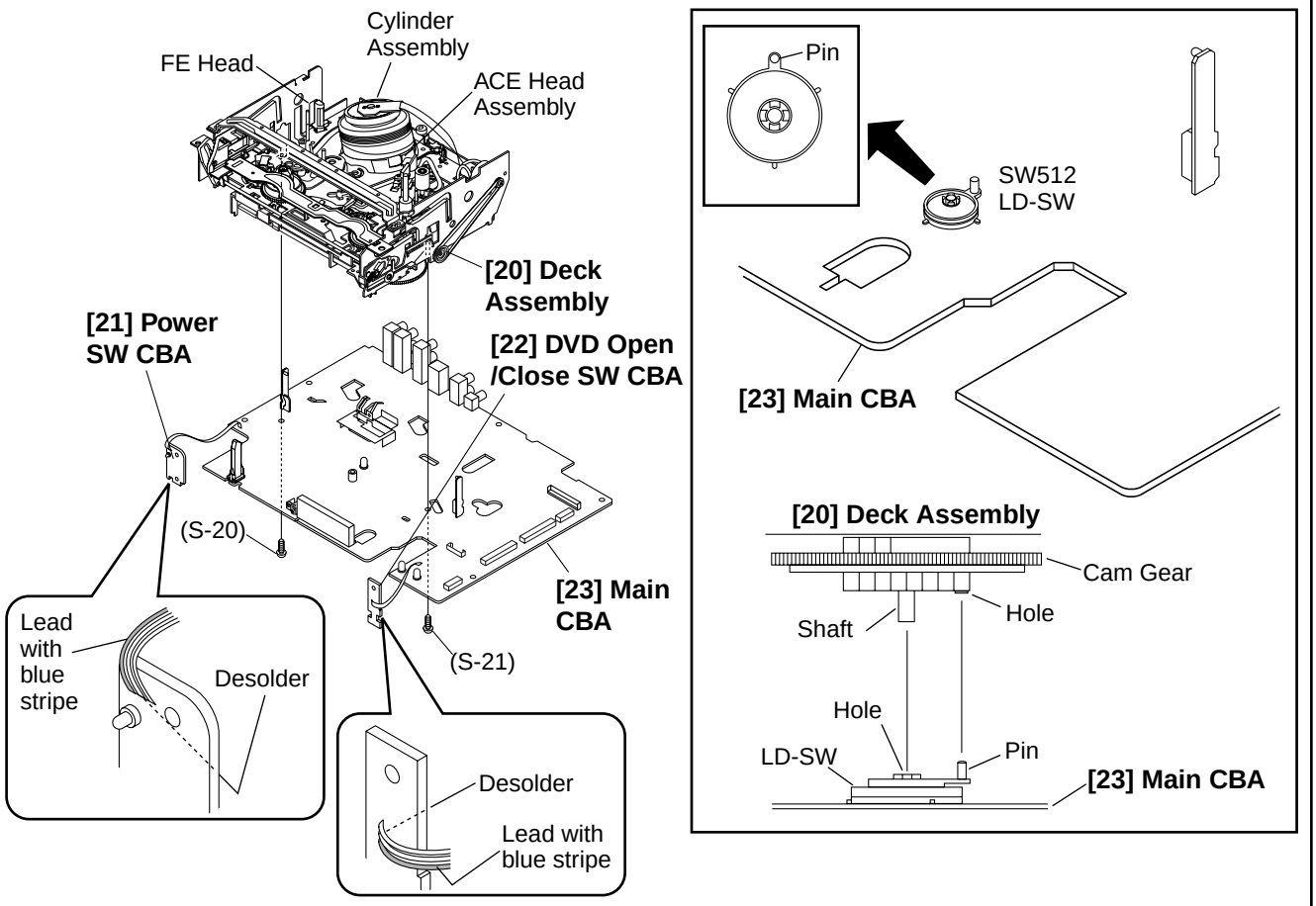
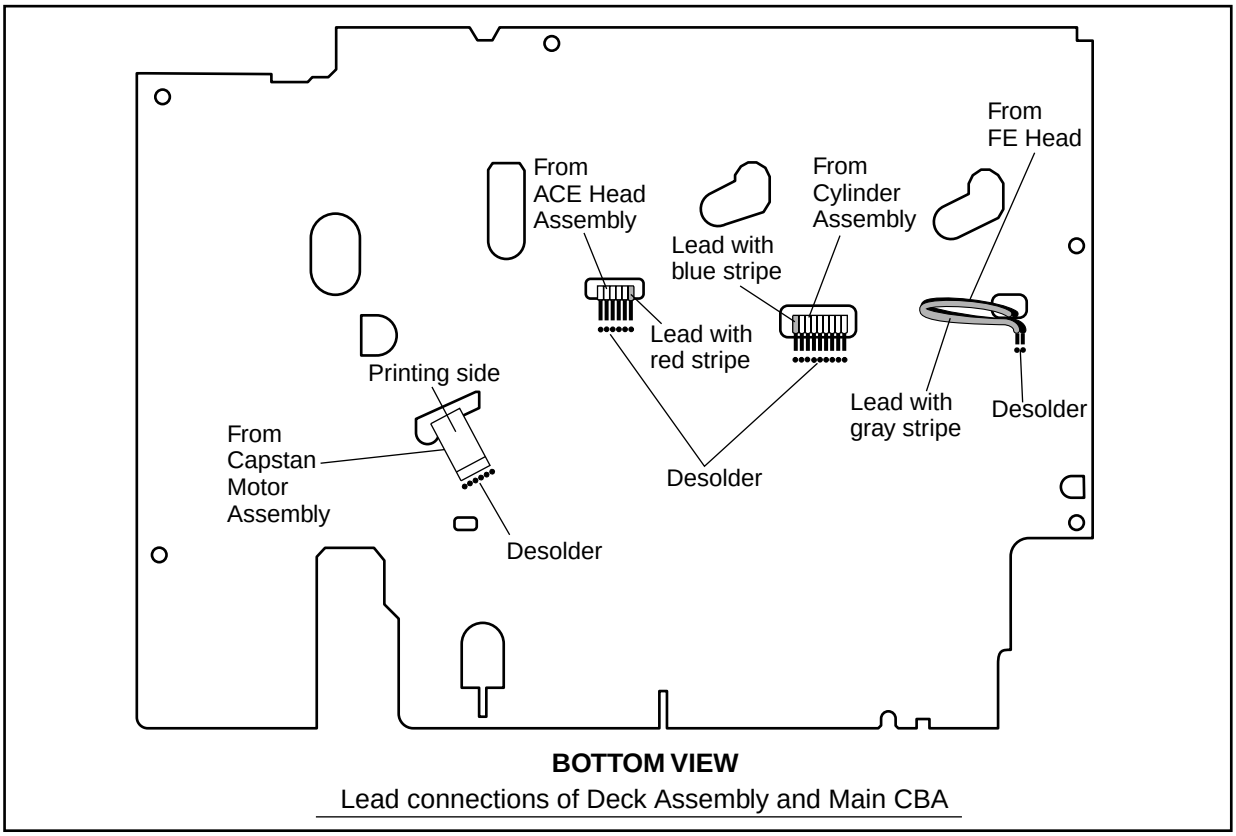

(S-15)
[18] D/T Bracket L
(S-16)
(S-17)
(S-17)
(S-17)
(S-16)
(S-18)
(S-16)
(S-16)
(S-16)
(S-19)
[19] VCR Chassis Unit
(S-14)
[17] Bracket R

Fig. D7





BOTTOM VIEW

Lead connections of Deck Assembly and Main CBA

Fig. D8

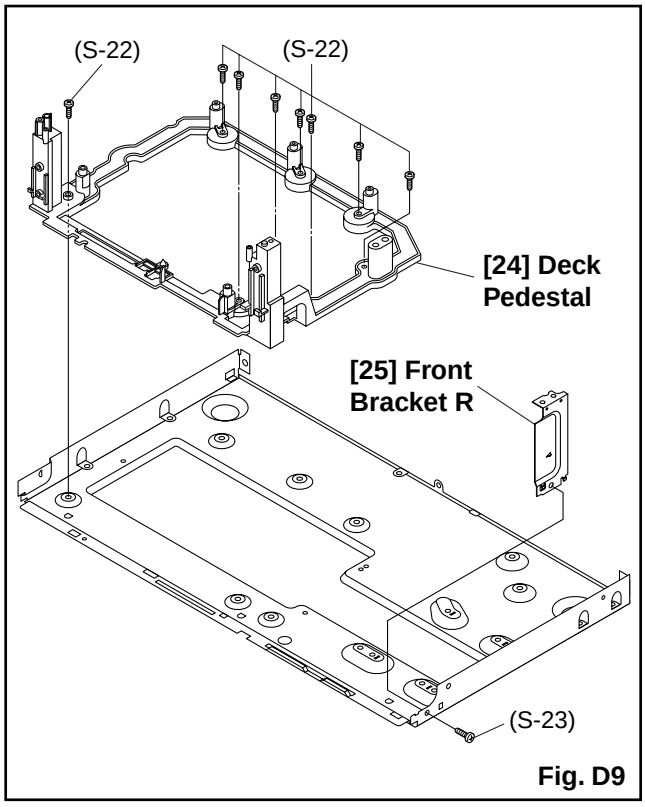
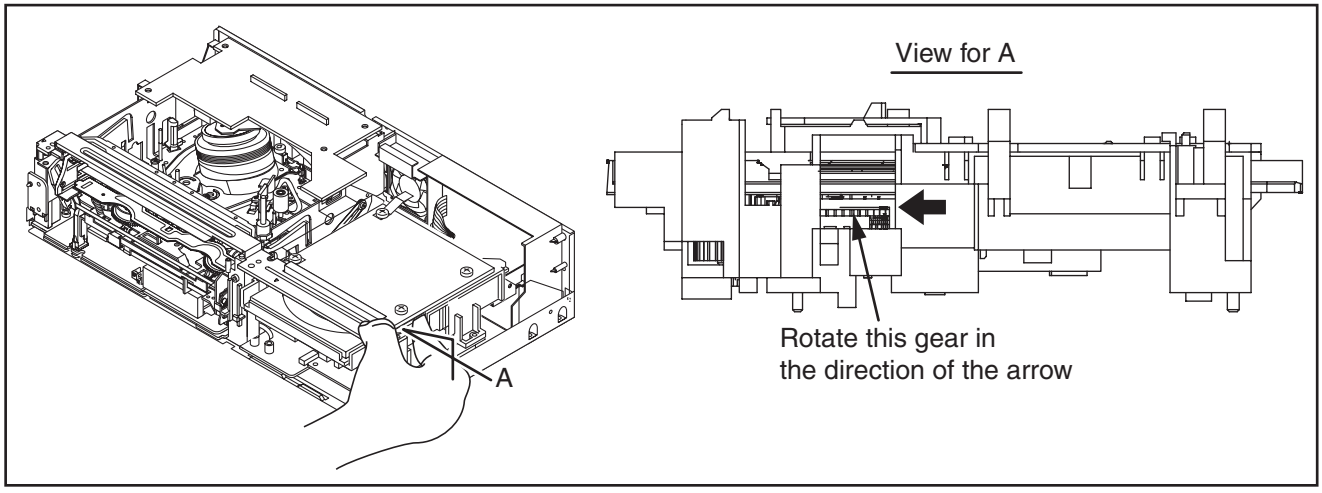


Fig. D9

3. How to Eject Manually

Note: When rotating the gear, be careful not to damage the gear.

1. Remove the Top Cover.
2. Rotate the gear in the direction of the arrow manually as shown below until the tray descends.
3. Pull the tray out manually and remove a disc.



ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note: "CBA" is abbreviation for "Circuit Board Assembly."

NOTE:

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either [CHANNEL ▼] or [CHANNEL ▲] button on the front panel first, then the [PLAY] button on the front panel.

Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50 V/Div.,
   F-Range: DC~AC-20 MHz
2. Alignment Tape (FL8A)

Head Switching Position Adjustment

Purpose: To determine the Head Switching position during playback.

Symptom of Misadjustment: May cause Head Switching noise or vertical jitter in the picture.

Test point	Adj. Point	Mode	Input
TP751(V-OUT) TP302(RF-SW) GND	VR1501 (Switching Point)	PLAY (SP)	-----
Tape	**Measurement Equipment**	**Spec.**	
FL8A	Oscilloscope	6.5H ± 1H (412.7µs±63.5µs)	

Connections of Measurement Equipment

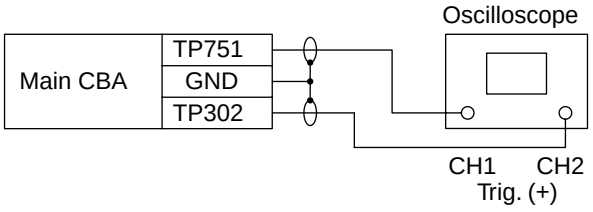
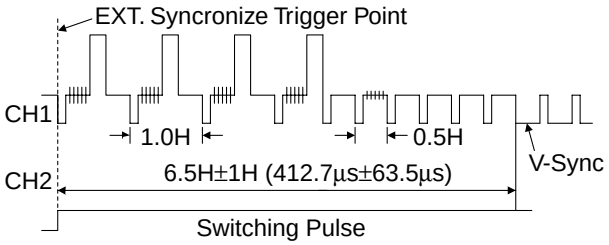


Figure 1



Note: TP751(V-OUT), TP302(RF-SW), VR1501(Switching Point) --- Main CBA

Reference Notes:

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H ± 1H (412.7 µs ± 63.5 µs) delayed position from the rising edge of the CH2 head switching pulse waveform.

HOW TO INITIALIZE THE DVD RECORDER & VCR

To put the program back at the factory-default, initialize the DVD recorder & VCR as the following procedure.

< DVD Section >

1. Turn the DVD recorder on.
2. Confirm that no disc is loaded or that the disc tray is open. To put the DVD recorder into the Version display mode, press [DVD], [CM SKIP], [1], [2], and [3] buttons on the remote control in that order. Fig. a appears on the screen.

*1: "*******" differs depending on the models.
*2: Firmware Version differs depending on the models, and this indication is one example.

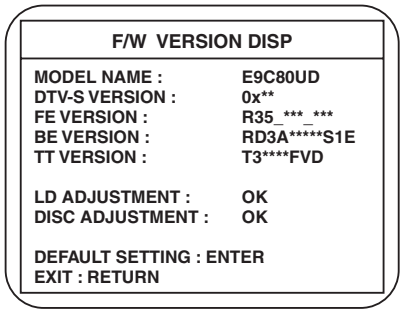


Fig. a Version Display Mode Screen

3. Press [OK] button, then the DVD recorder starts initializing. When the initializing is completed, the DVD recorder exits the Version display mode and turns off the power automatically.
   * To move into the Normal mode from the Version display mode, press [RETURN] button on the remote control instead of [OK] button.
   * When [STANDBY-ON] button is pressed before [OK] button is pressed, the DVD recorder exits the Version display mode, then the power turns off.

FIRMWARE RENEWAL MODE

1. Turn the power on and remove the disc on the tray.
2. To put the DVD recorder into version up mode, press [DVD], [CM SKIP], [6], [5], and [4] buttons on the remote control unit in the order. Then the tray will open automatically.
   Fig. a appears on the screen and Fig. b appears on the VFD.

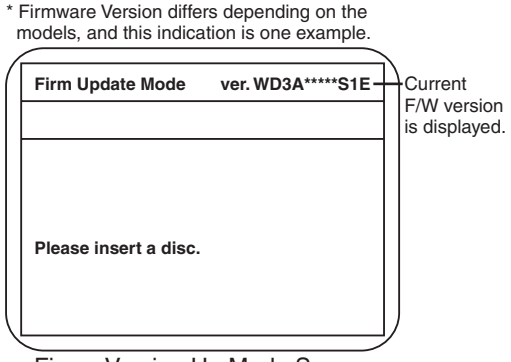

* Firmware Version differs depending on the models, and this indication is one example.
Firm Update Mode
ver. WD3A*****S1E
Current F/W version is displayed.
Please insert a disc.

Fig. a Version Up Mode Screen

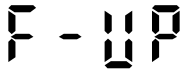


Fig. b VFD in Version Up Mode

3. Load the disc for version up.
   Fig. c appears on the screen. The file on the top is highlighted as the default.
   When there is only one file to exist, Step 4 will start automatically.

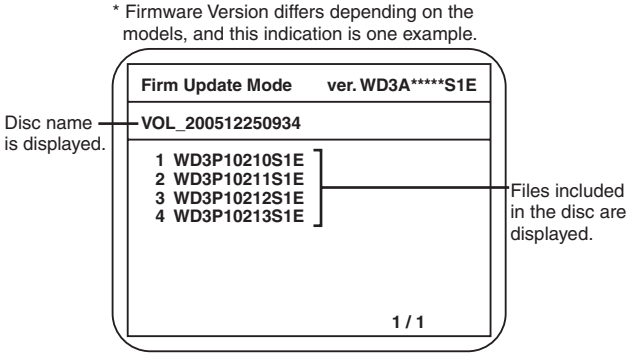


Fig. c Update Disc Screen

4. Select the firmware version pressing arrow buttons, then press [OK].
   Fig. d appears on the screen and Fig. e appears on the VFD. The DVD recorder starts updating.

   About VFD indication of Fig. e:

   1) When Fig. d is displayed on the screen, “F-UP” is displayed on the VFD.
   2) When “Firmware Updating... XX% Complete.” is displayed on the screen, “10210” is displayed on the VFD.

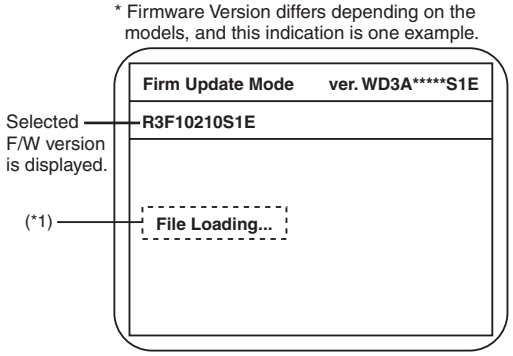

* Firmware Version differs depending on the models, and this indication is one example.
Firm Update Mode
ver. WD3A*****S1E
Selected F/W version is displayed.
R3F10210S1E
(*1)
File Loading...

Fig. d Programming Mode Screen

Fig. e VFD in Programming Mode (Example)

The appearance shown in (*1) of Fig. d is described as follows.

No.	Appearance	State
1	File Loading...	Sending files into the memory
2	Firmware Updating... XX% Complete.	Writing new version data
---	Firmware Update Failure	Failed in updating

5. After updating is finished, the tray opens automatically.
   At this time, no button is available.
6. Pull out the AC code once, then insert it again.

FUNCTION INDICATOR SYMBOLS

< VCR Section >

Note:

If a mechanical malfunction occurs, the power is turned off. When the power comes on again after that by pressing [STANDBY-ON] button, an error message is displayed on the TV screen for 5 seconds.

Led Mode	Indicator Active
When reel or capstan mechanism is not functioning correctly	"⏏ R" is displayed on a TV screen. (Refer to Fig. 1.)
When tape loading mechanism is not functioning correctly	"⏏ T" is displayed on a TV screen. (Refer to Fig. 2.)
When cassette loading mechanism is not functioning correctly	"⏏ C" is displayed on a TV screen. (Refer to Fig. 3.)
When the drum is not working properly	"⏏ D" is displayed on a TV screen. (Refer to Fig. 4.)
P-ON+5V Power safety detection	"⏏ P" is displayed on a TV screen. (Refer to Fig. 5.)

TV screen

When reel or capstan mechanism is not functioning correctly

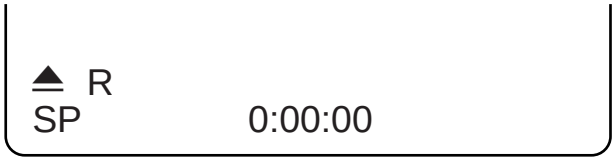


Fig. 1

When tape loading mechanism is not functioning correctly

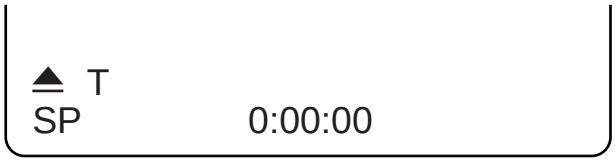


Fig. 2

When cassette loading mechanism is not functioning correctly

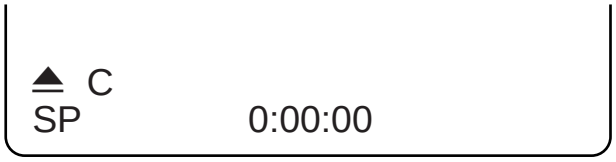


Fig. 3

When the drum is not working properly

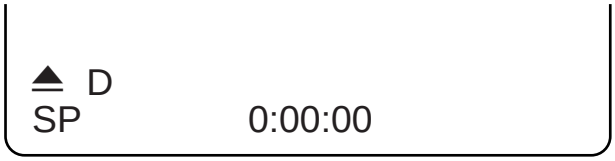


Fig. 4

P-ON+5V Power safety detection

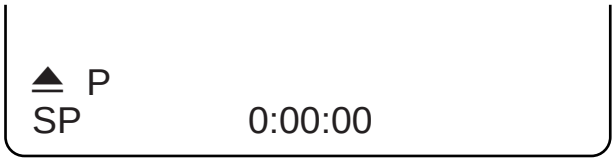
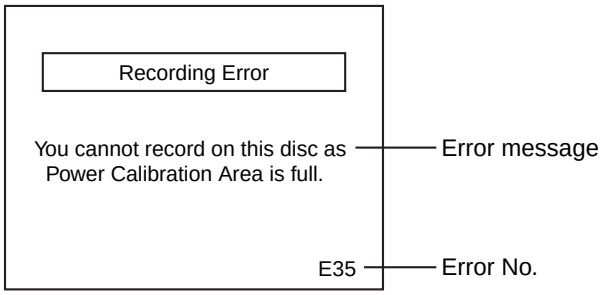


Fig. 5

< DVD Section >

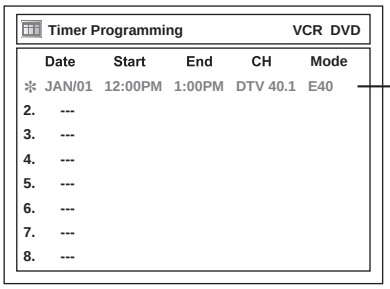
Note: If an error occurs, a message with the error number appears on the screen.



Message	Solution	Error No.	Error Description	Priority
Can not record on this disc.	Insert the recordable disc, and ensure the disc status satisfies the recording requirements.	1	An error occurs during data reading.	-
		2	There is no reply for 15 seconds in Test Unit Ready.	-
		3	Cannot write the data after trying three times.	-
		4	An error occurs with OPC.	-
		5	During recovery in a record.	-
		6	An error occurs even if recovery has been tried three times.	-
		7	An error occurs in a format.	-
		8	It cannot start an encode.	-
		9	NV_PCK/RDI_PCK is not in encoded data.	-
		10	Encode Pause condition continued for 10 minutes.	-
		11	Encode Pause condition continued in normal REC condition for 10 minutes.	-
		12	Difference in the address and can not get StreamID of RDI/VIDEO.	-
		13	It is a reply that “ATAPI is not readable.”	-
		14	Cannot write the data after recovering SMALL VMGI.	-
		15	Cannot write the data after DVD-R Reverse Track.	-
		16	An error occurs in Finalize Close.	-
		17	An error occurs in Rec Stop Close.	-
		18	An error occurs in PCA Full (DVD_R).	-
		19	Safety Stop occurs during editing.	-
		20	High Speed Disc.	2
		21	The disc is not formatted.	5
		22	Disc Error has occurred.	3
		23	The -R Disc of VR Mode.	6
		24	The disc except DVD-R/RW or finalized DVD-R.	1
This program is not allowed to be recorded.	You cannot record copy prohibited programs.	25	During the Macrovision picture input.	11
		26	During the CGMS picture input.	12

Message	Solution	Error No.	Error Description	Priority
This disc is protected and not recordable.	Release the disc protect setting in the Disc Setting menu.	29	Disc Protected Disc.	7
Disc is full. (No area for new recording)	Insert the recordable disc with enough recording space.	30	No available recording space.	5
You cannot record on this disc as Control Information is full.	Delete unnecessary titles.	34	There is not space to record field of control information.	10
You cannot record on the disc as Power Calibration Area is full.	Insert a new disc.	35	PCA is Full. (in REC start)	4
This disc is already finalized.	Release the finalizing for this disc.	36	It is finalized. (Video Format Disc)	6
Can not record on this disc.	Repeat the same operation.	37	Access to Memory Area range outside.	-
		38	Sector Address is wrong.	-
		39	BUP writing error of chapter editing.	-
You cannot record more than 49 titles on the disc.(The maximum is 49.)	Delete unnecessary titles.	43	Its recording capacity has been reached.	9
You cannot record more than 254 chapters on the disc.(The maximum is 254.)	Delete unnecessary chapter marks.	44	The 254 chapter has been reached.	10
This program is not recordable in +VR mode.	You cannot record copy prohibited programs.	45	During the CGMS picture input.	12
The disc has a different menu layout. (Set “Replace Disc Menu” to “ON” to rewrite the menu,after that you will record to.	Set “Replace Disc Menu” to “ON” to rewrite the menu,after that you will record to.	46	Trying to record onto the +VR formatting disc that had been recorded by the other recorder.	7

If an error occurs during the timer recording, one of the following error numbers (40 to 42) or the above error messages (error number: 1 to 46) is displayed on the recording menu after timer recording.
(Once the timer programming list with error indication is displayed, the program line(s) with error will be cleared only after the programs are cancelled and reset to the timer standby mode.)
(In the case of the error occurs during setting the timer programming, no error messages is displayed.)

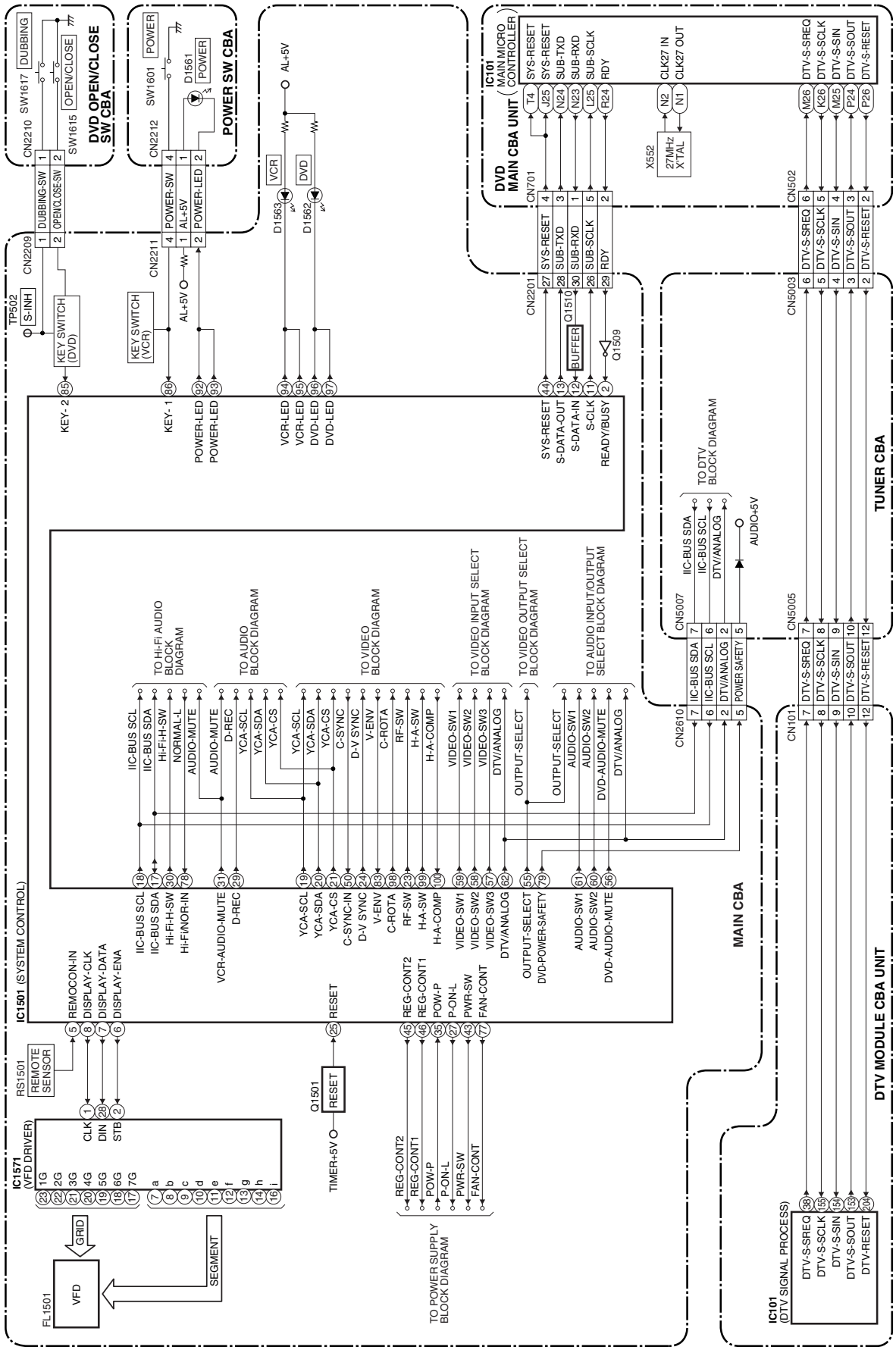


A program with the error number is grayed out and asterisked on the timer programming list.

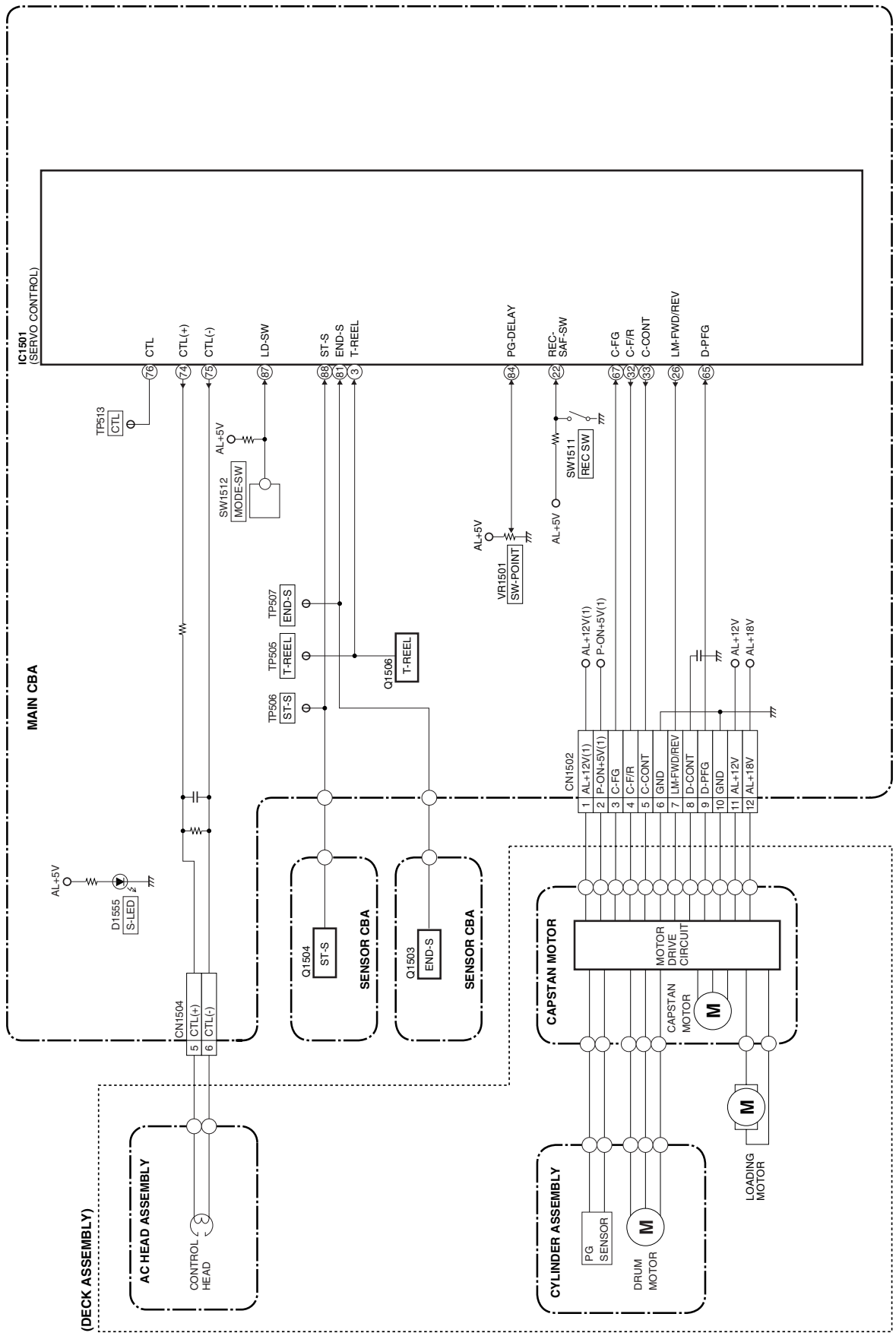
Message	Solution	Error No.	Error Description	Priority
Error message is not displayed.	- Set the timer programming correctly. - Set the timer programming before the start time. - Insert a recordable videotape with a record tab.	40	- Some portion has not been recorded because of program overlapping. - Recording did not start at the start time. - No Videotape is inserted. Videotape ran out during recording.	-
	Turn the power on and set the clock correctly then set timer programming again.	41	Power failed	-
	Insert the recordable disc.	42	No disc when recording	-

BLOCK DIAGRAMS

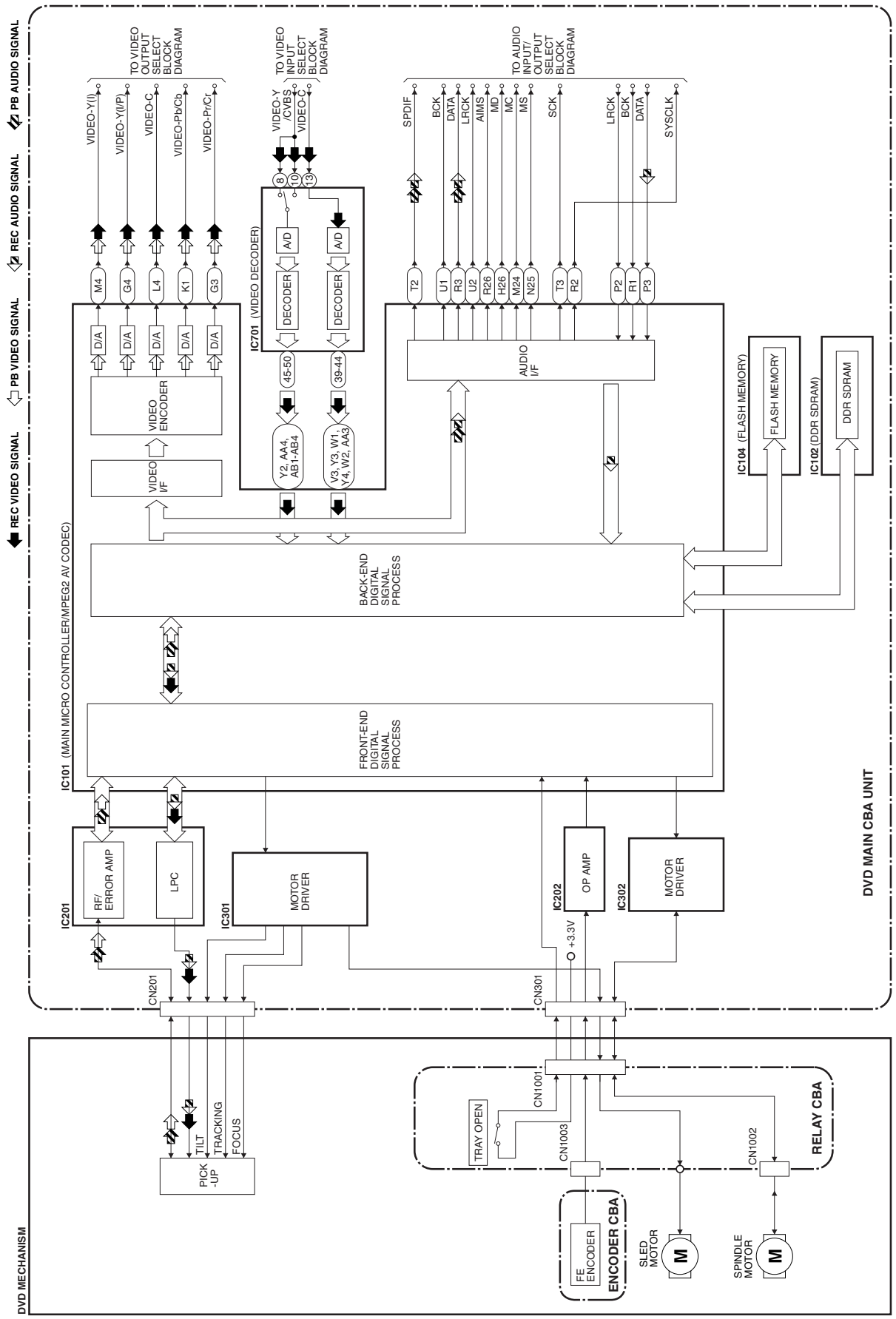
System Control Block Diagram



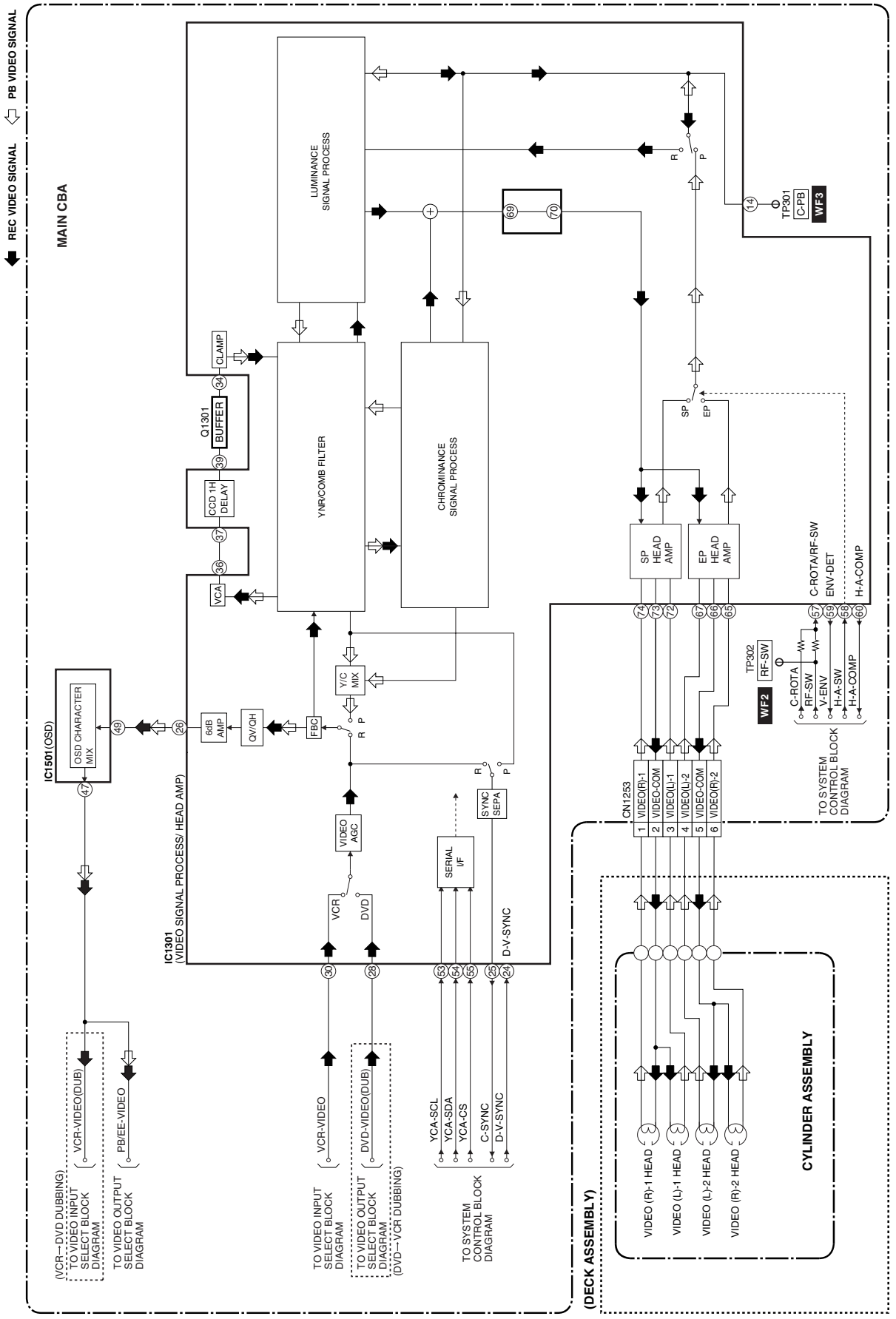
Servo Block Diagram



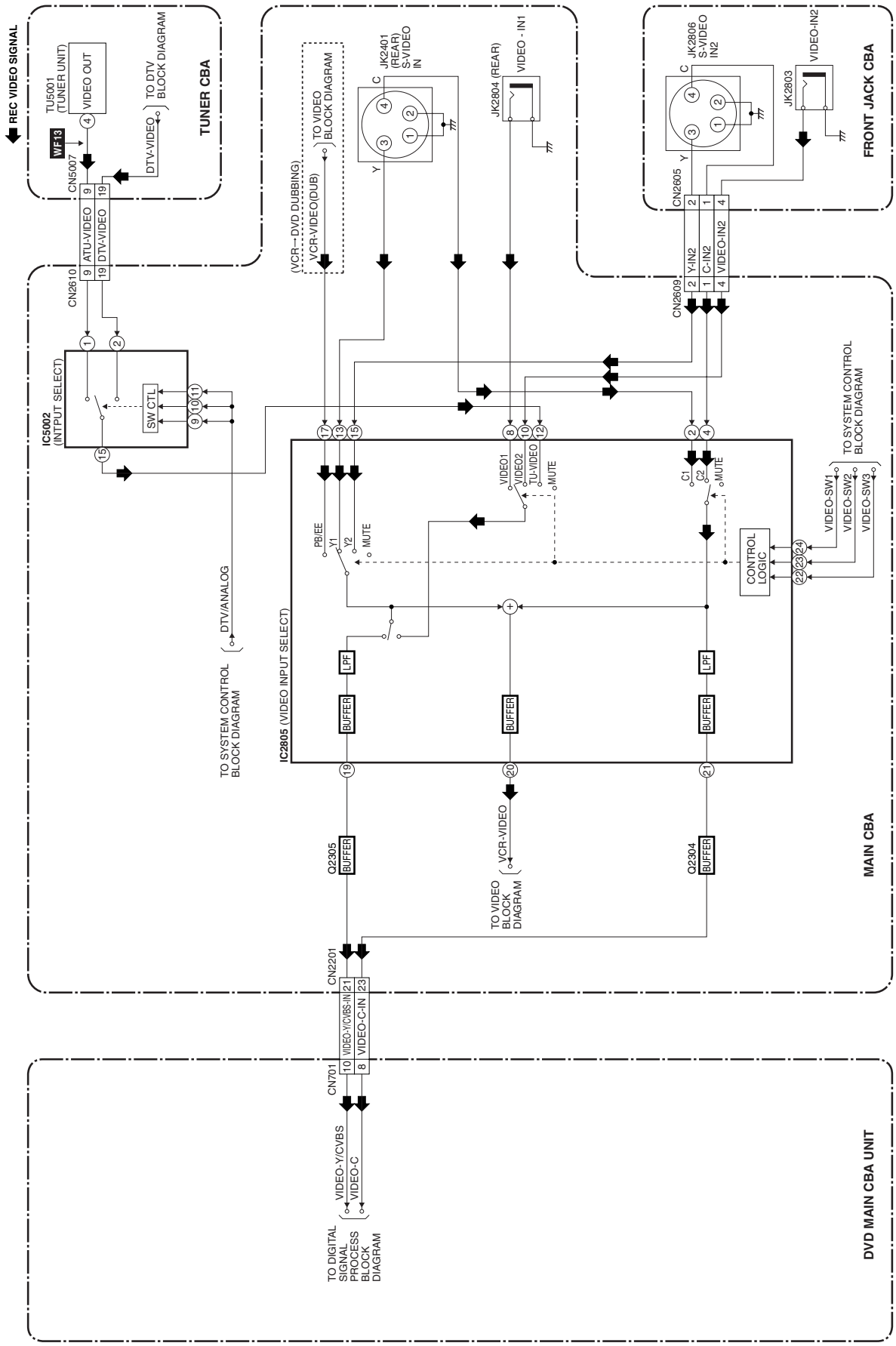
Digital Signal Process Block Diagram



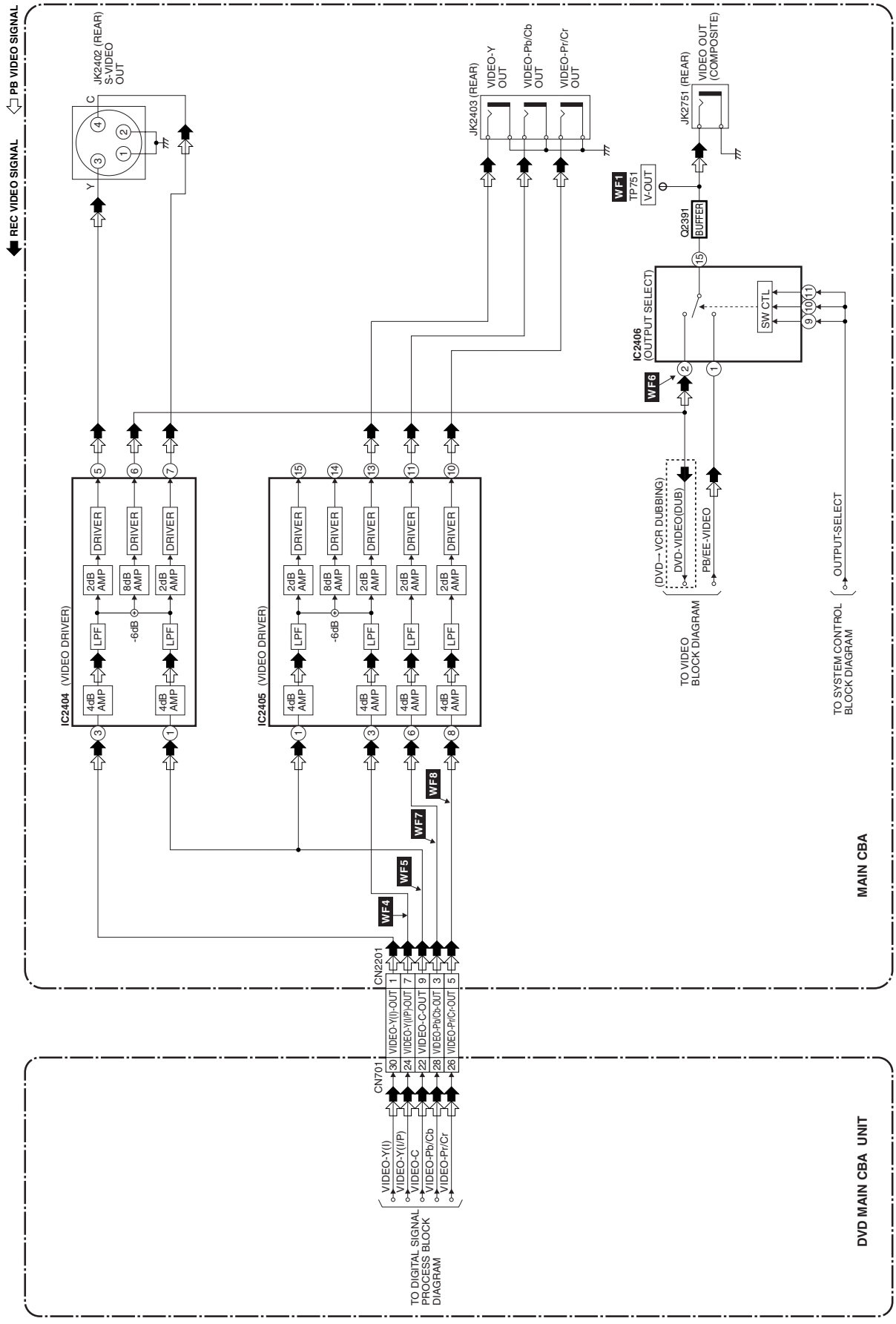
Video Block Diagram



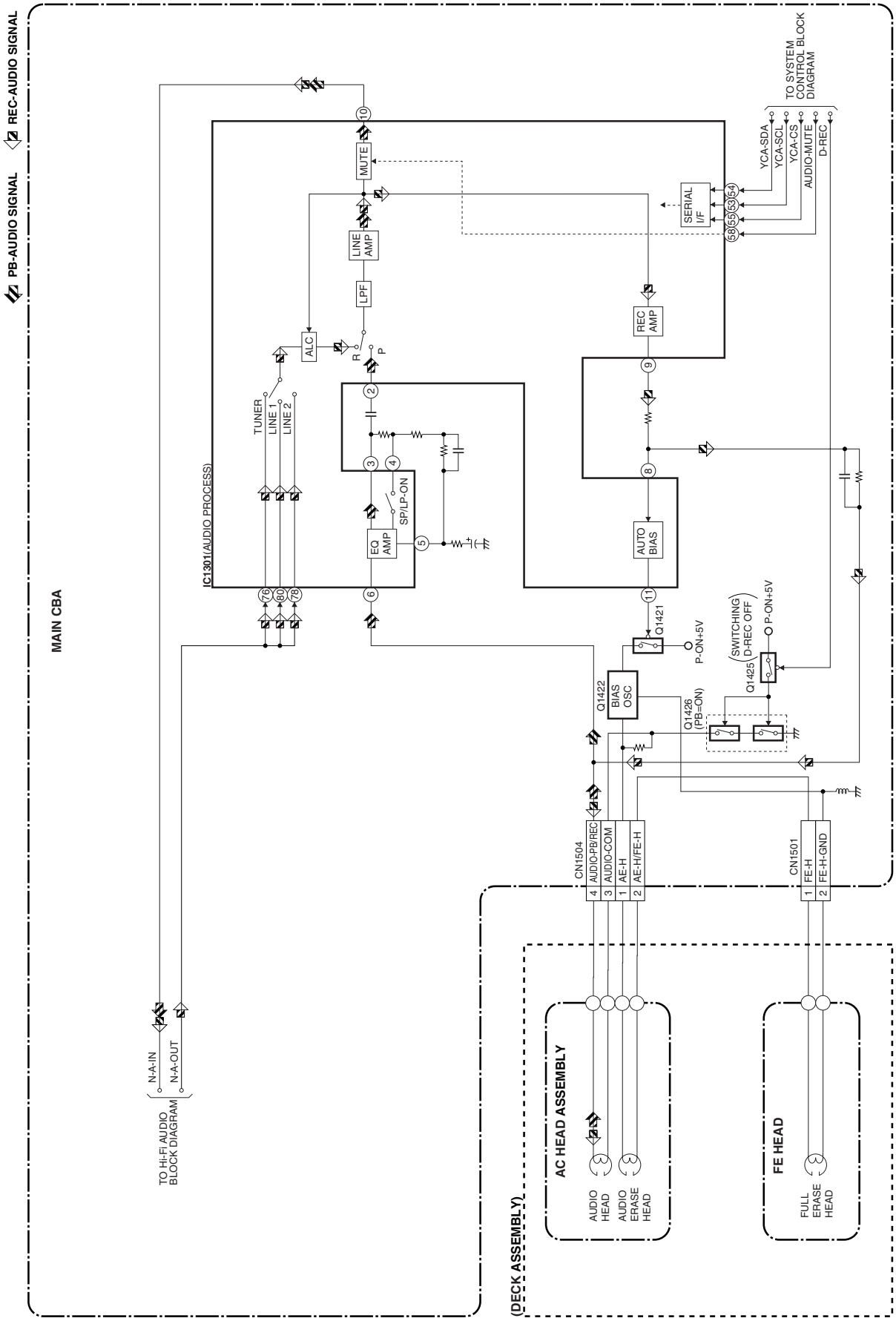
Video Input Select Block Diagram



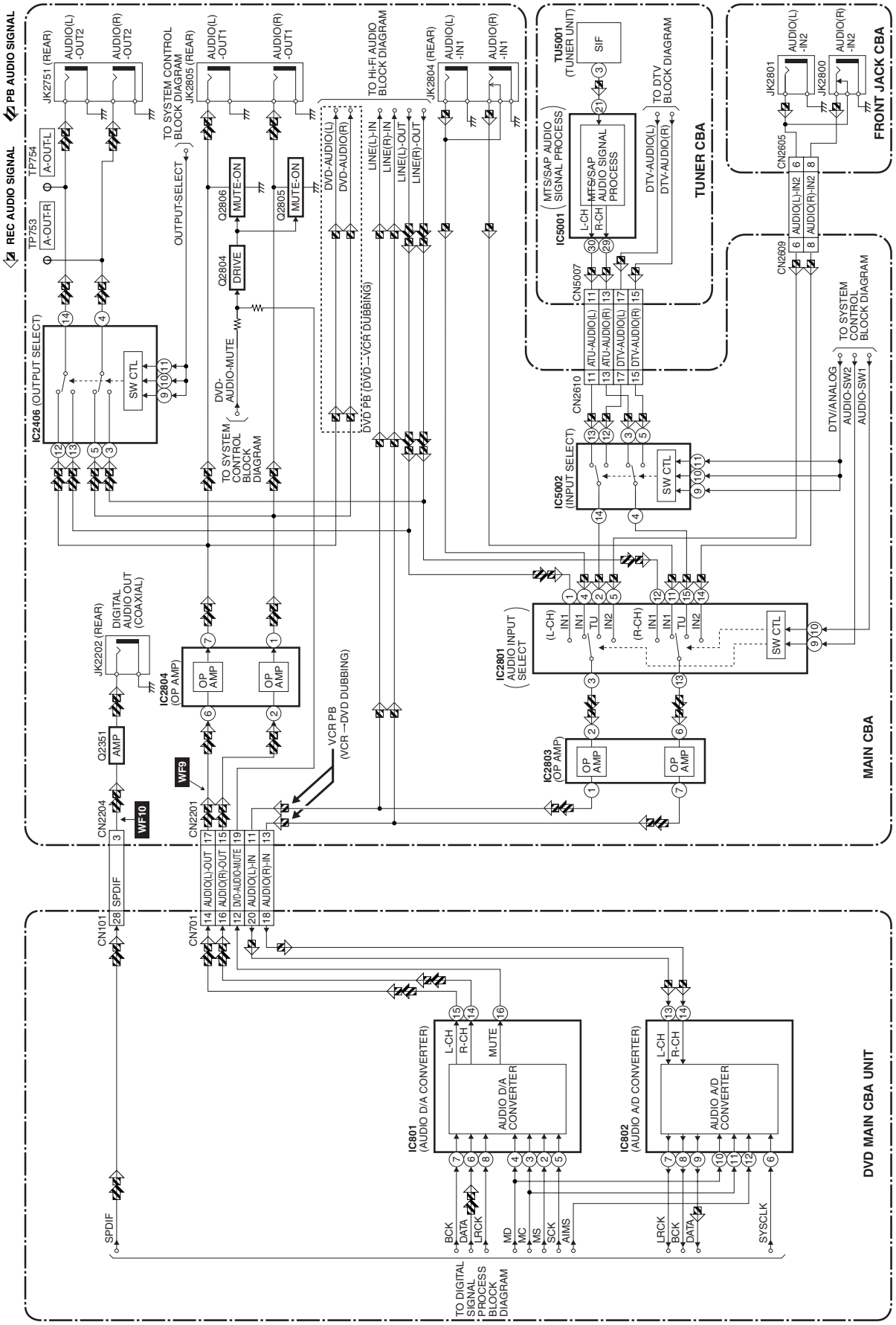
Video Output Select Block Diagram



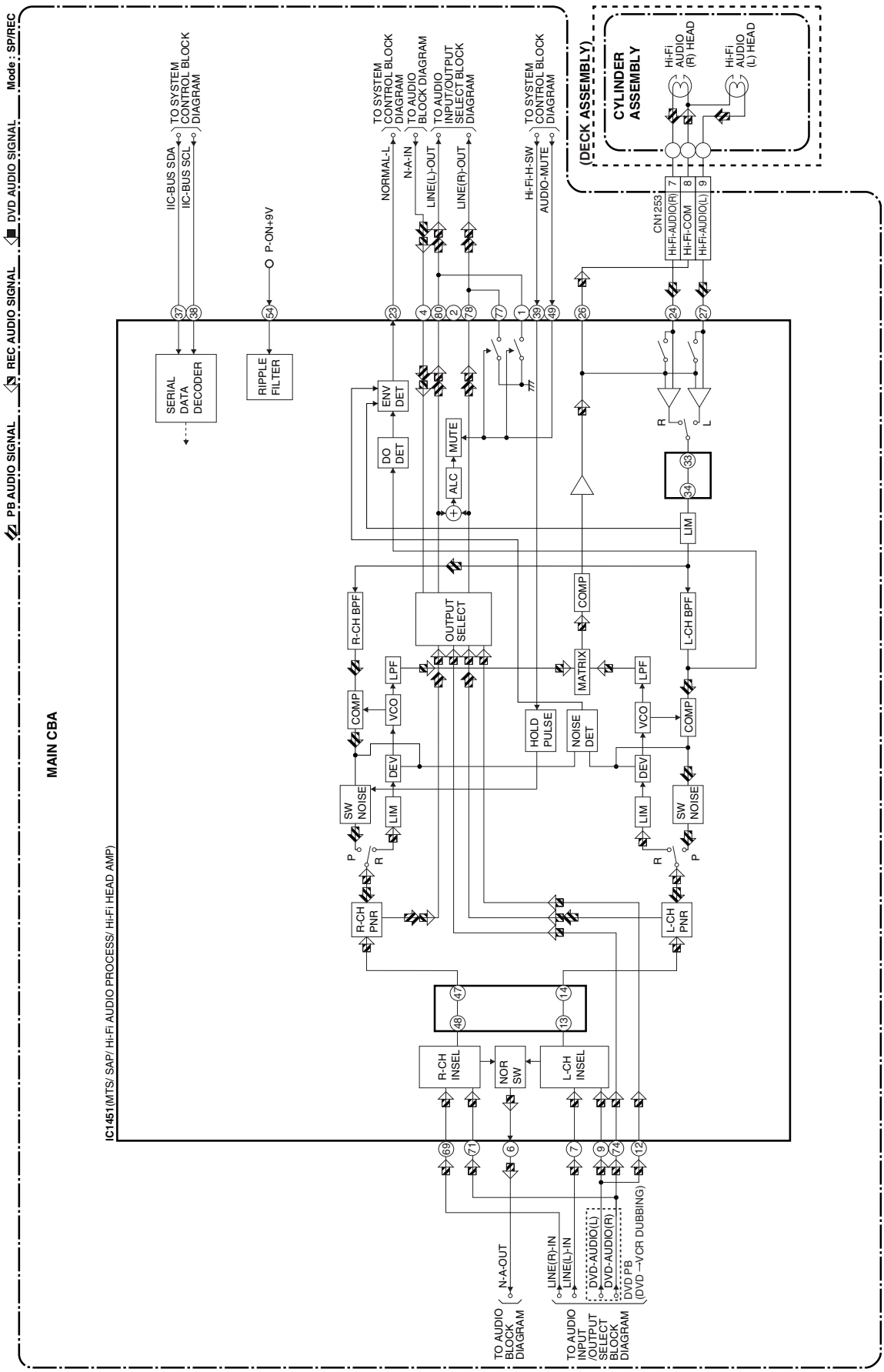
Audio Block Diagram



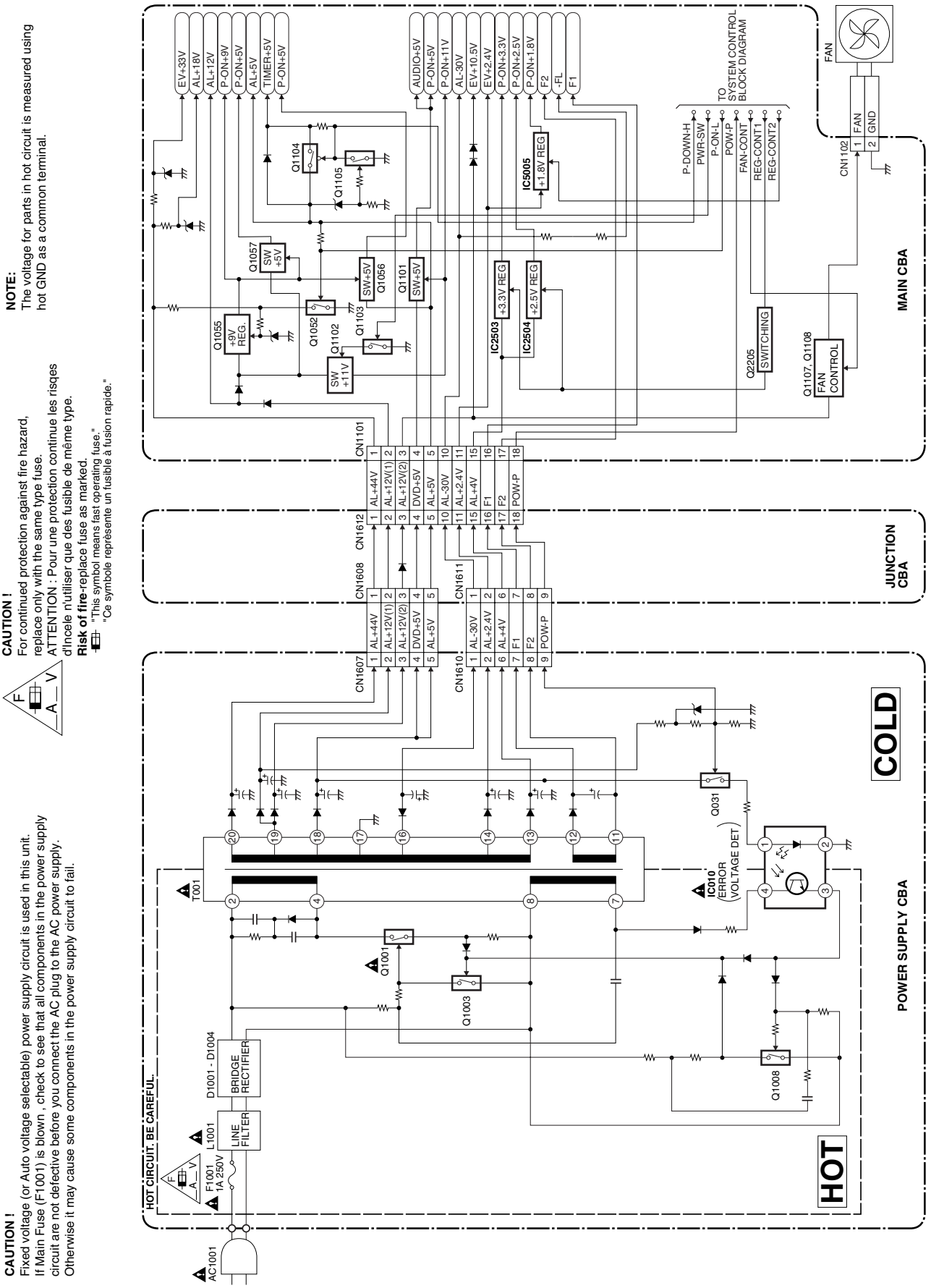
Audio Input/Output Select Block Diagram



Hi-Fi Audio Block Diagram



Power Supply Block Diagram

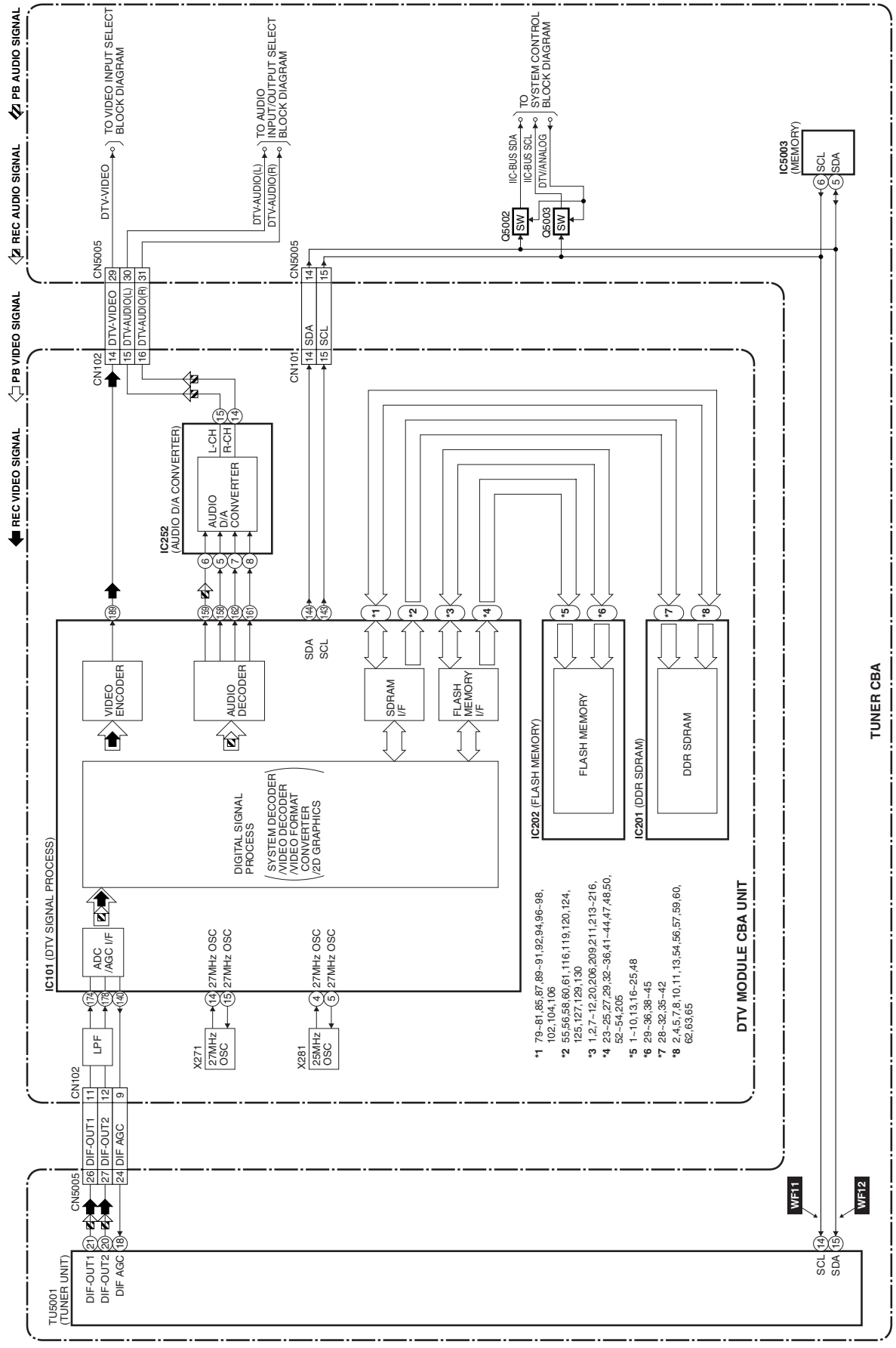


CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.
ATTENTION : Pour une protection continue les risques d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

DTV Block Diagram



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

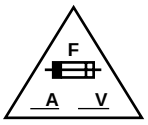
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark "⚠" in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K = 10^3$, $M = 10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P = 10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:



FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

This symbol means fast operating fuse.
Ce symbole reprèsente un fusible à fusion rapide.

2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

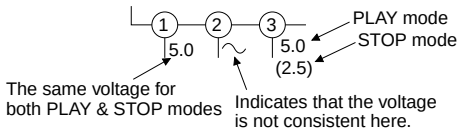
3. Note:

1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

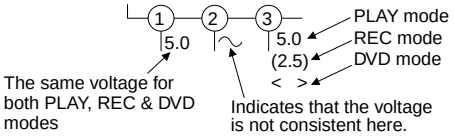
4. Mode: SP/REC

5. Voltage indications for PLAY and REC modes on the schematics are as shown below:

< DVD Section >



< VCR Section >

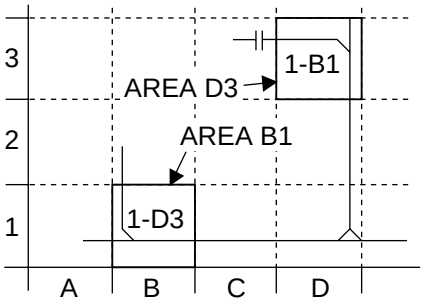


Unit: Volts

6. How to read converged lines

1-D3
- Distinction Area
- Line Number (1 to 3 digits)

Examples:
1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".



7. Test Point Information

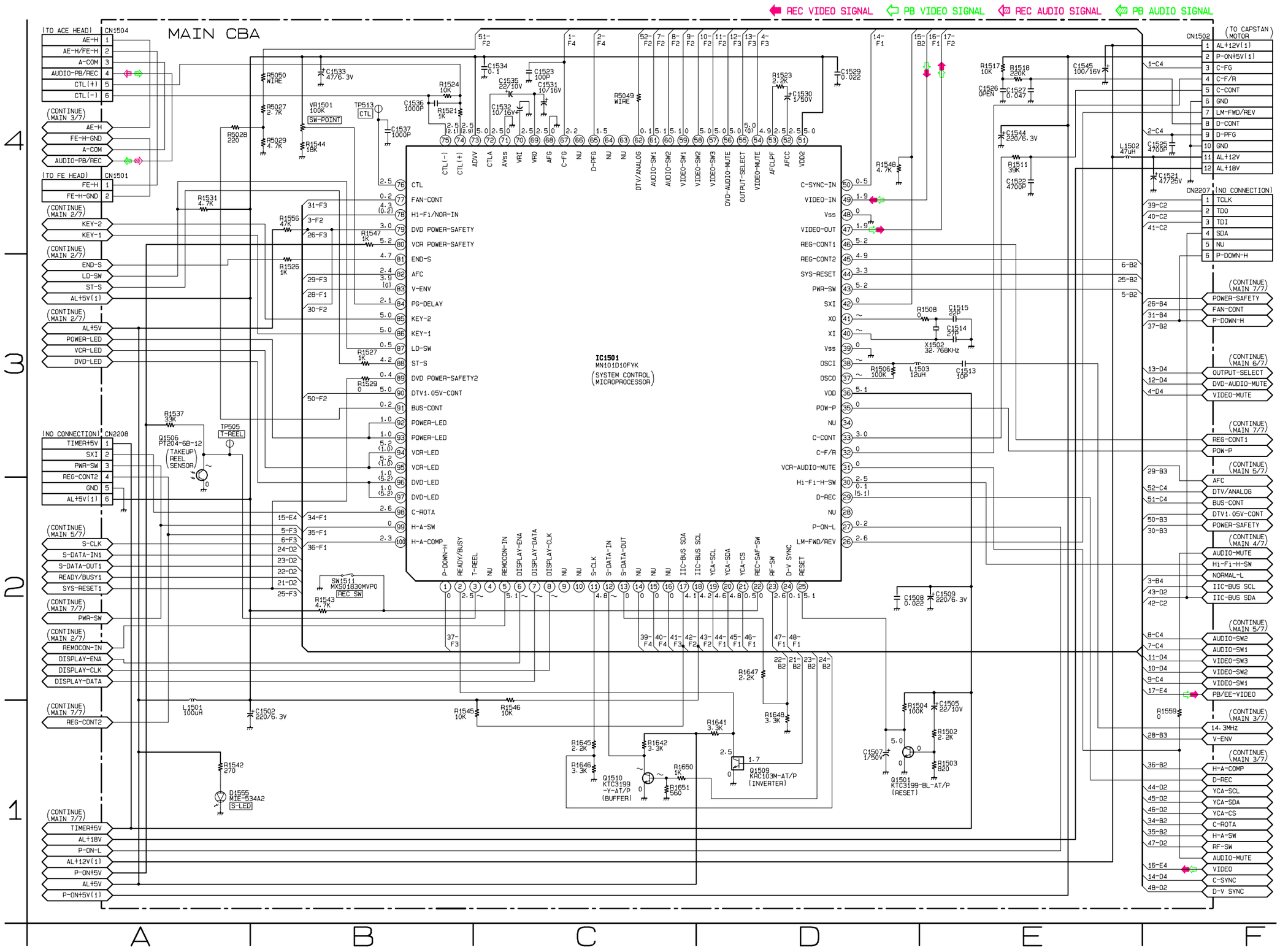
: Indicates a test point with a jumper wire across a hole in the PCB.

: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

Main 1/7 Schematic Diagram



Main 2/7, Power SW, DVD Open/Close SW & Sensor Schematic Diagram

FL1501 MATRIX CHART

	7G	6G	5G	4G	3G	2G	1G
a	▶	a	a	a	a	a	XP
b	❚❚	b	b	b	b	b	SP
c	◷	c	c	c	c	c	LP
d	∞	d	d	d	d	d	EP
e	REC	e	e	e	e	e	SLP
f	PM	f	f	f	f	f	SEP
g	g	g	g	g	g	g	P.SCAN
h	h	:	T	:	⇄	C	W
i	REPEAT	CD	VCD	VCR	⇆	DVD	R

POWER SW CBA

CN2212 — CN2211

1	AL+5V	1
2	POWER-LED	2
3	GND	3
4	POWER-SW	4

D1561 204HD/E (POWER)

SW1601 (POWER)

DVD OPEN/CLOSE SW CBA

CN2210 — CN2209

1	DUBBING-SW	1
2	OPEN/CLOSE-SW	2
3	GND	3

SW1617 (DUBBING)

SW1615 (OPEN /CLOSE)

MAIN CBA

R1601 1.8K — R1602 1K — R1603 1.2K — R1604 1.5K — R1605 2.2K — R1606 3.9K — R1607 8.2K — R1608 22K

SW1602 (STOP /EJECT) — SW1603 (PLAY) — SW1604 (REW) — SW1605 (FF) — SW1606 (REC /OTR) — SW1607 (D/V OUTPUT) — SW1608 (CH UP) — SW1609 (CH DOWN)

R1611 1.8K — R1612 1K — R1613 1.2K — R1614 1.5K

SW1611 (STOP) — SW1613 (PLAY)

R1618 22K — R1617 8.2K — R1616 3.9K — R1615 2.2K

TP502 (S-INH)

SW1616 (REC /OTR)

FL1501 7-BT-301NS (VFD)

7G 6G 5G 4G 3G 2G 1G

CD VCD VCR DVD

REC PM REPEAT

R W XP SP LP EP SLP SEP P.SCAN

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24)

C1933 22/50V

(CONTINUE) MAIN 7/7: F2, F1, -FL

(CONTINUE) MAIN 1/7: KEY-2, KEY-1

R1528 10K — R1525 10K

(CONTINUE) MAIN 1/7: REMOCON-IN, DISPLAY-ENA, DISPLAY-CLK, DISPLAY-DATA

R1590 0

C1587 4700P

R1595 82K

IC1571 PT6313-S-TP(L) (VFD DRIVER)

(28)	(27)	(26)	(25)	(24)	(23)	(22)	(21)	(20)	(19)	(18)	(17)	(16)	(15)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
DIN	NU	OSC	VSS	VDD	1G	2G	3G	4G	5G	6G	7G	1	VEE	CLK	STB	NU	NU	VSS	VDD	a	b	c	d	e	f	g	h
2.5	0	5.2	-21.1 (-21.3)	-21.1 (-21.3)	-21.1 (-21.4)	-21.1 (-21.4)	-21.0 (-21.4)	-21.1 (-21.4)	-21.2	-24.5	-24.6 (-24.9)			0	5.2	-10.8	-7.4 (-4.2)	-14.0 (-13.9)	-13.7 (-20.7)	-7.5	-20.6 (-11.0)	-14.0 (-11.0)	-17.4				

RS1501 KSM-602LU2S (REMOTE SENSOR)

V-OUT GND Vcc (1) (2) (3)

R1551 6.8K — L1505 100uH

C1588 100/6.3V — C1589 0.1

R1562 150

R1591 0

R1592 0

R1585 150

C1586 100/6.3V — C1585 0.1

R1566 150 — R1564 150

D1563 204-10GD/S957 (VCR)

D1562 204-10GD/S957 (DVD)

(CONTINUE) MAIN 1/7: AL+5V, POWER-LED, VCR-LED, DVD-LED

(CONTINUE) MAIN 1/7: END-S, LD-SW, ST-S, AL+5V(1)

R1536 3.6K — R1535 10K — R1534 470 — R1533 22K

SW1512 SSS-53MD-1 (MODE-SW)

R1532 1.5K

C1547 0.1

R1541 390K — R1540 390K

C1540 0.01

TP507 (END-S)

TP506 (ST-S)

SENSOR CBA

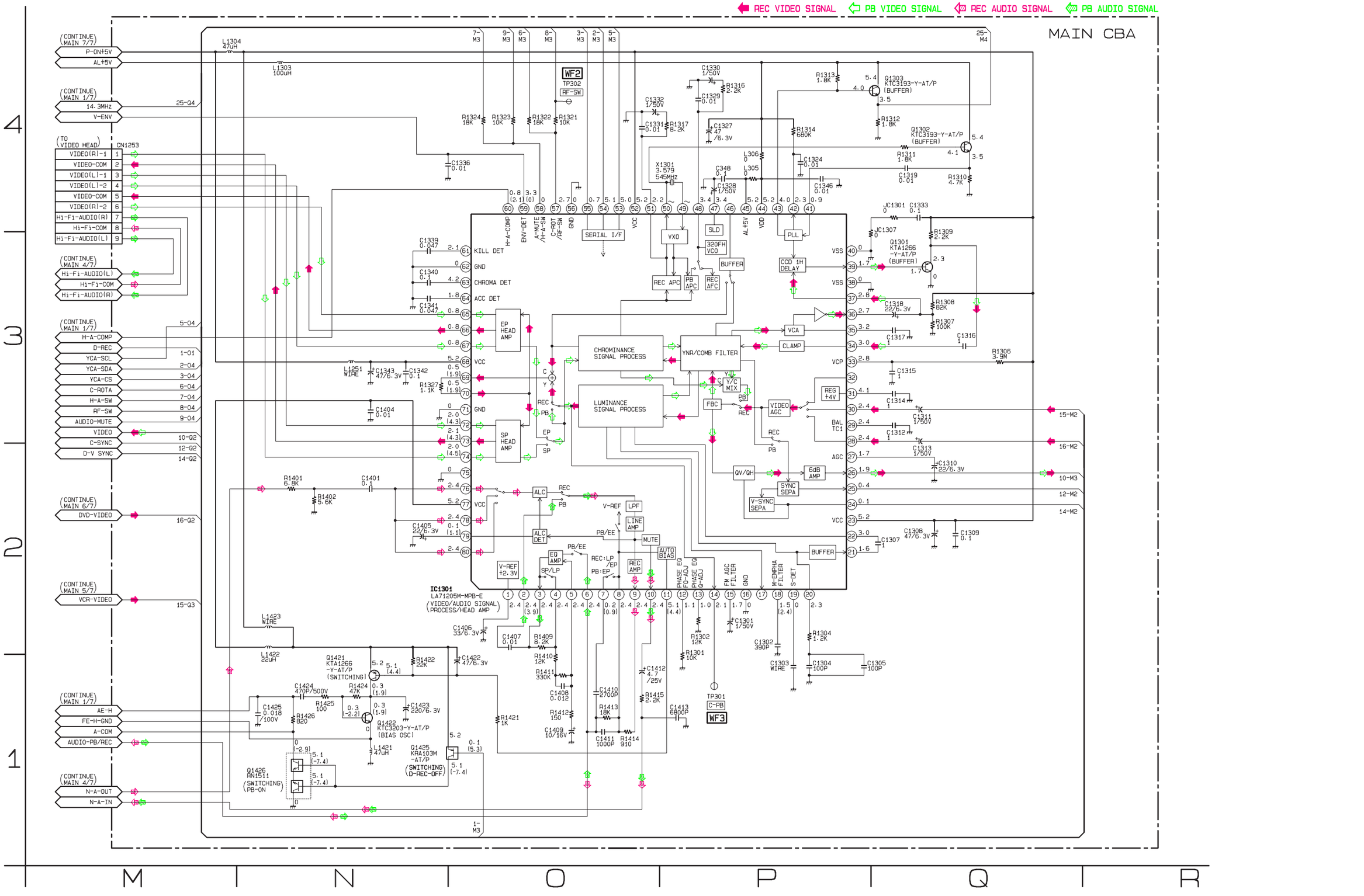
Q1503 PT204-6B-12 (END-S) 5.3 0

SENSOR CBA

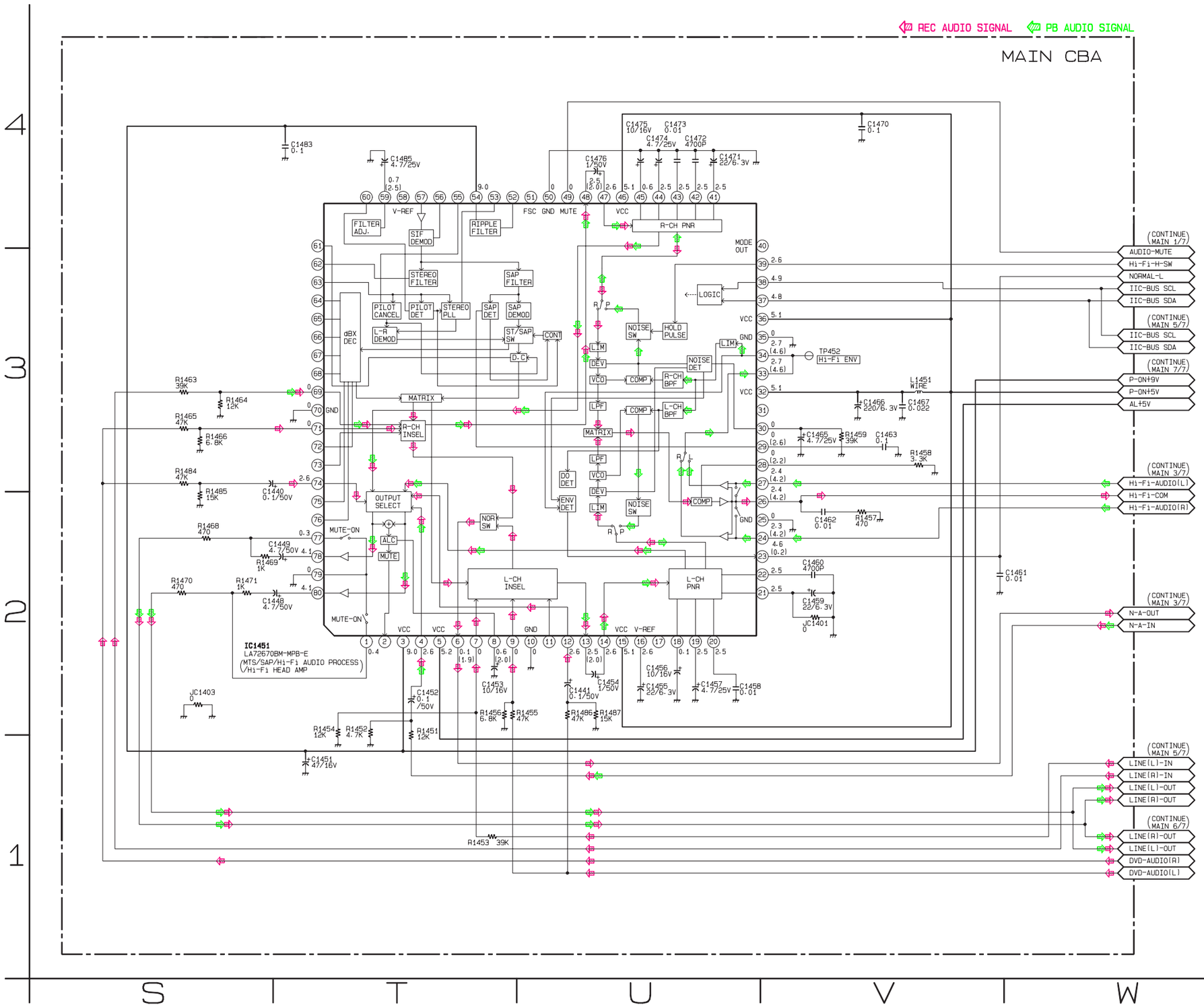
Q1504 PT204-6B-12 (ST-S) 5.2 0

UNLESS OTHERWISE SPECIFIED:
SWITCHES ARE SKQSAF001A.

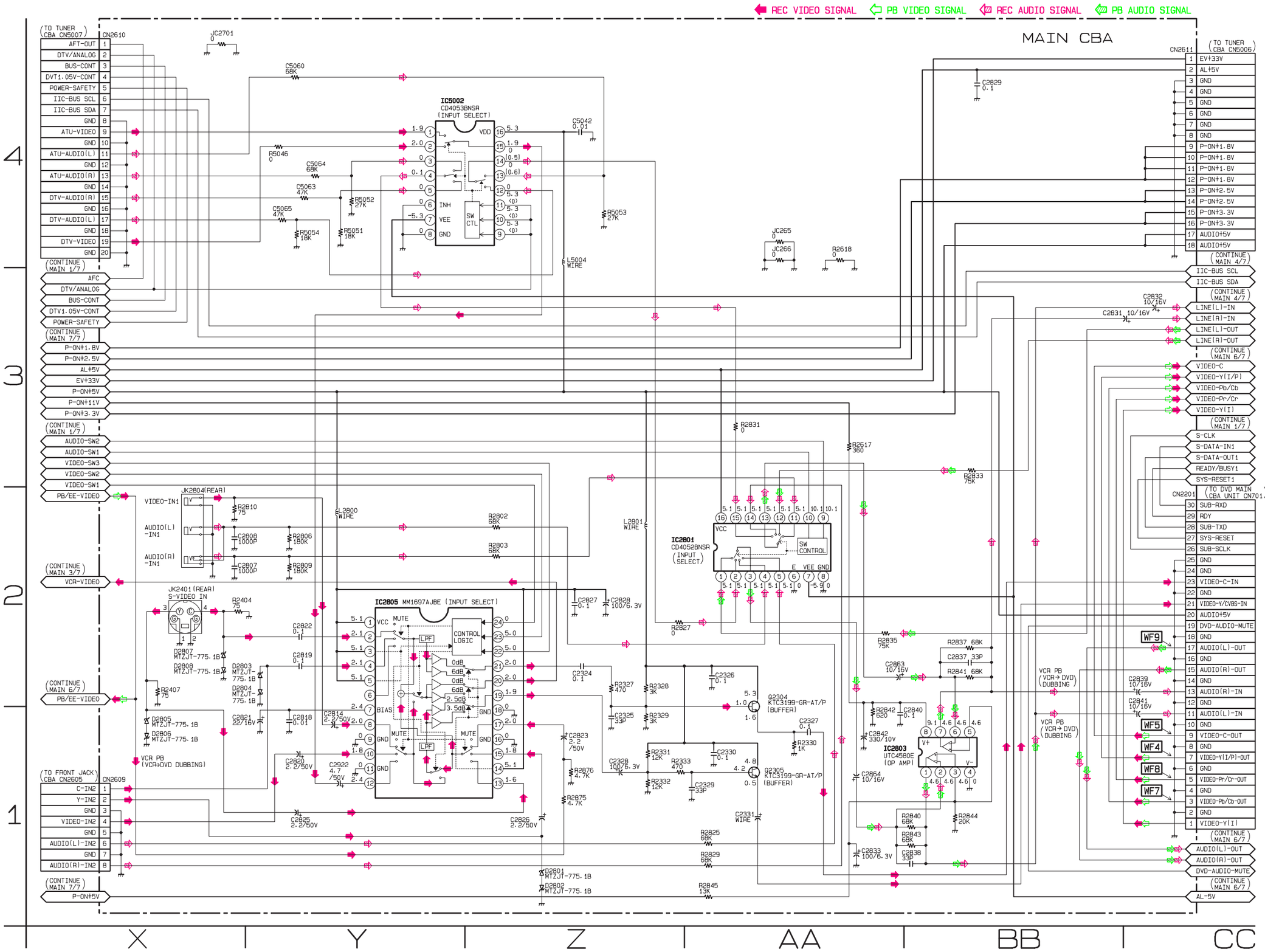
Main 3/7 Schematic Diagram



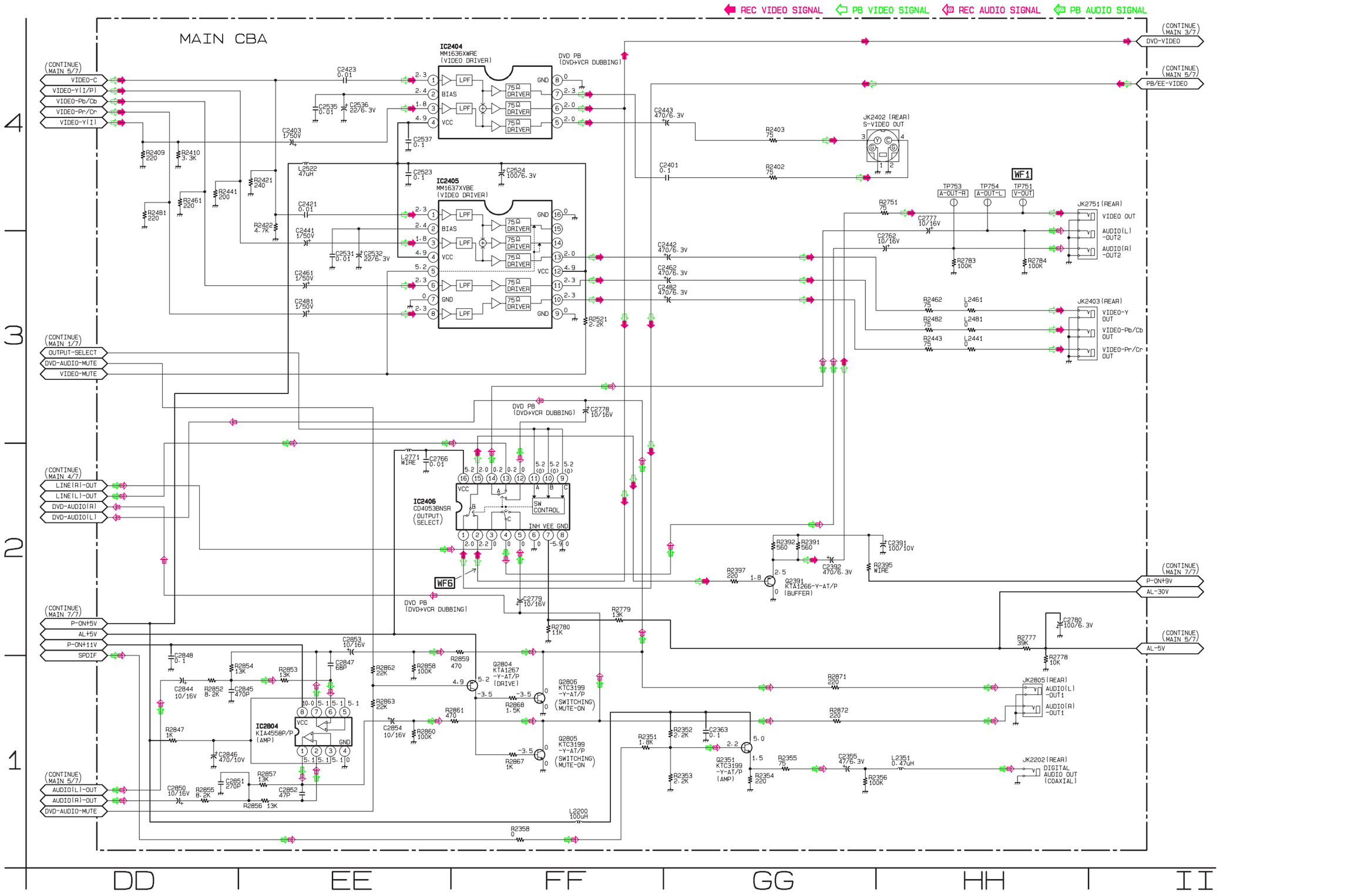
Main 4/7 Schematic Diagram



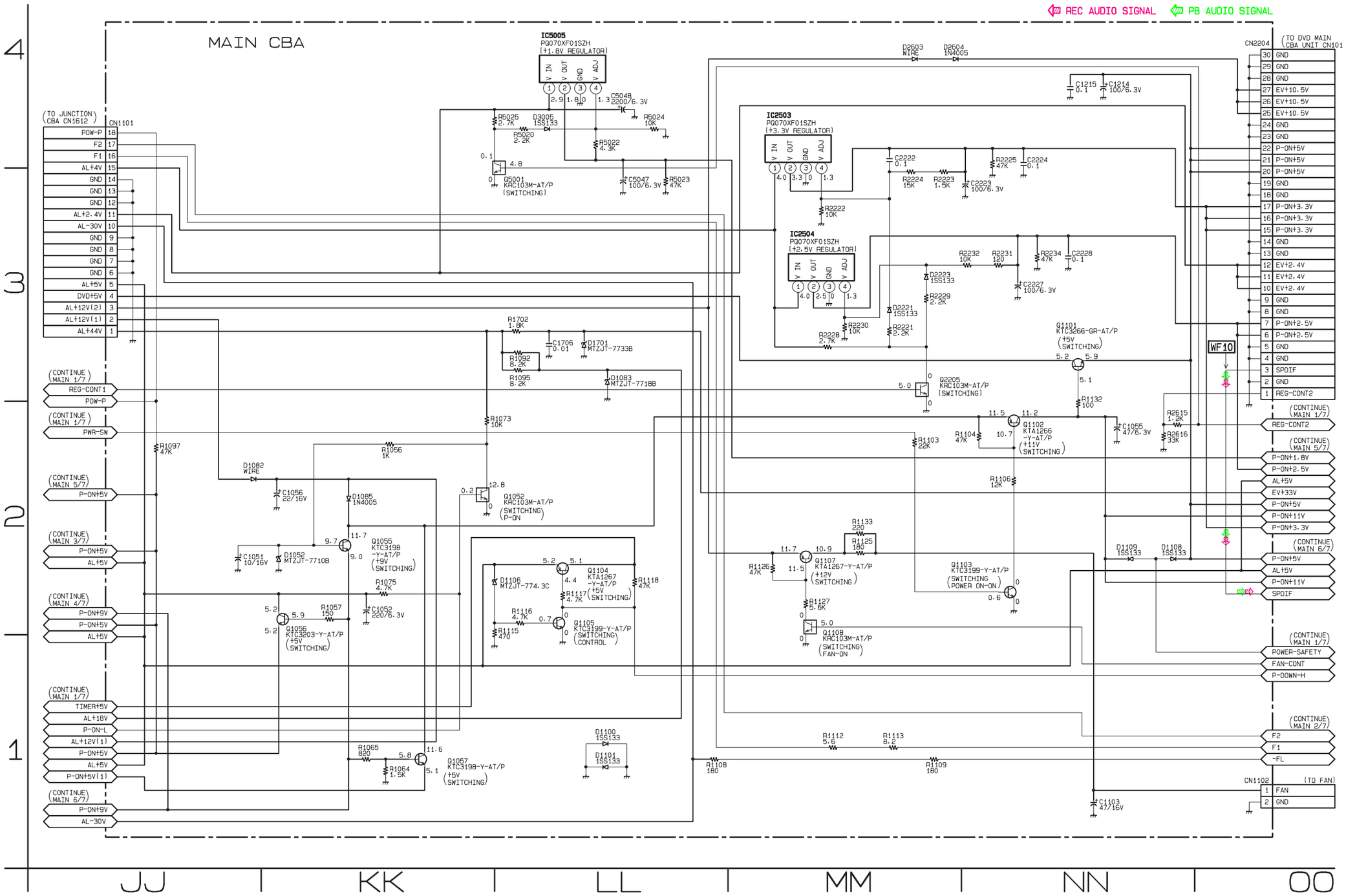
Main 5/7 Schematic Diagram



Main 6/7 Schematic Diagram



Main 7/7 Schematic Diagram

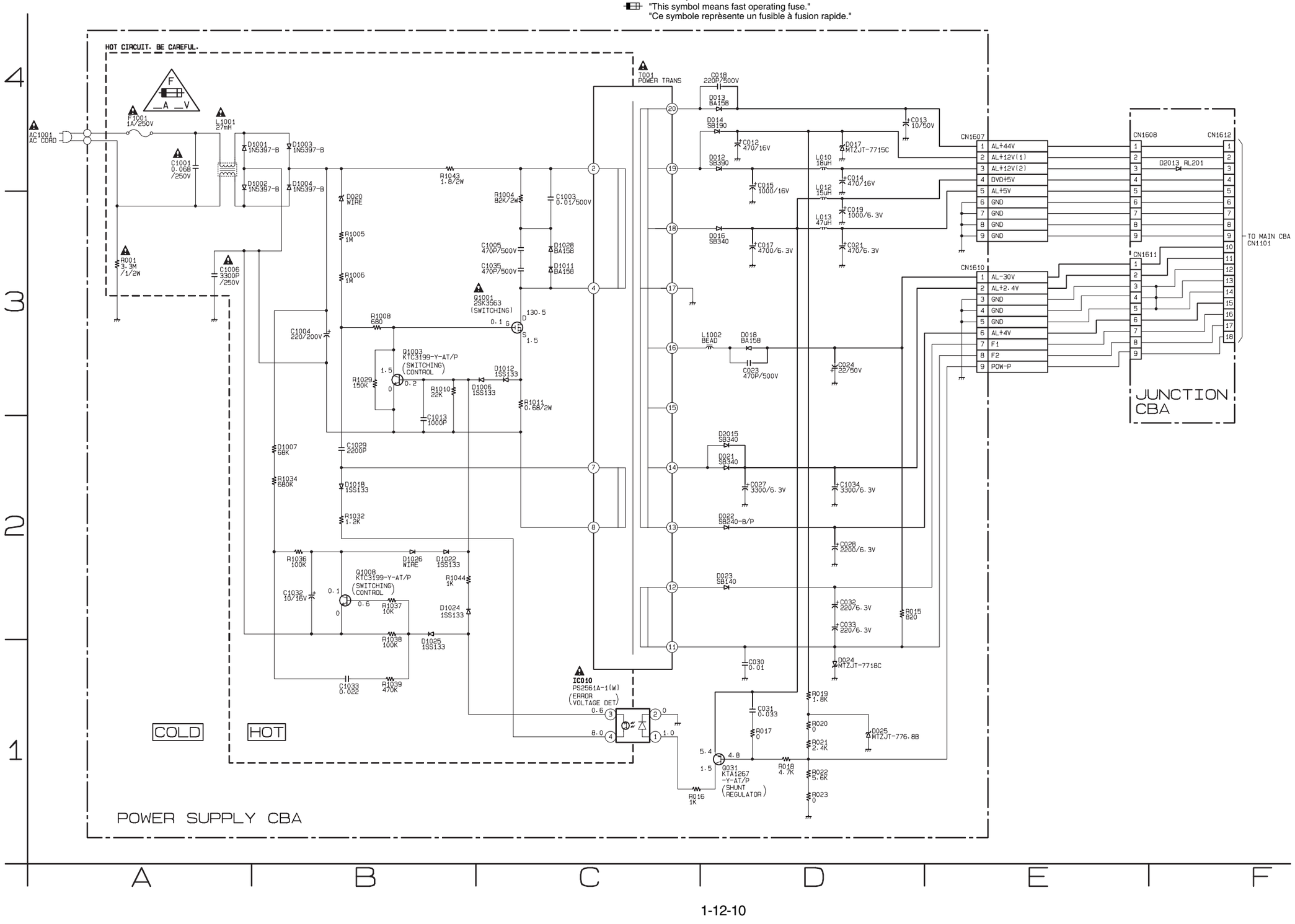


Power Supply & Junction Schematic Diagram

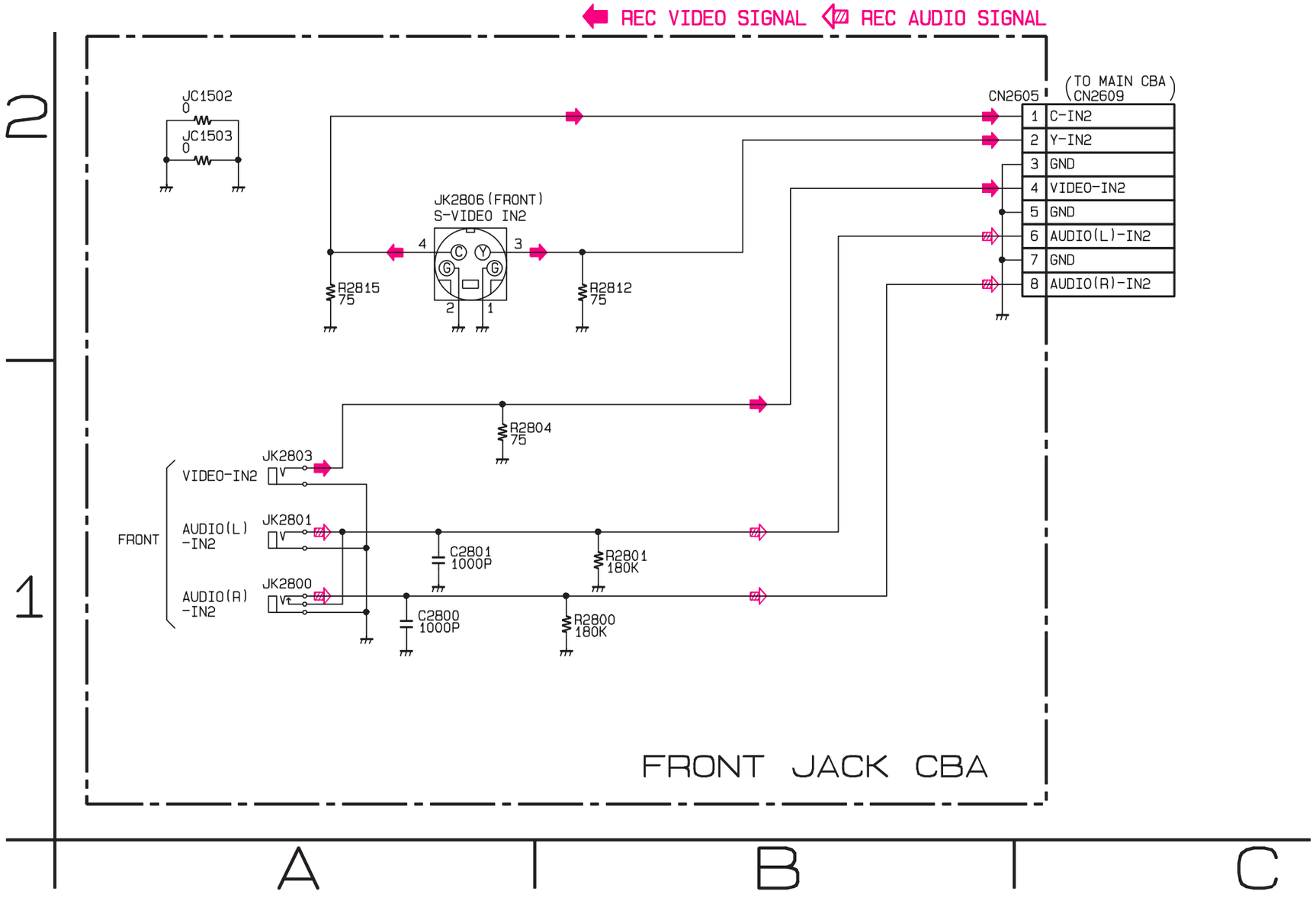
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION !
For continued protection against fire hazard,
replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

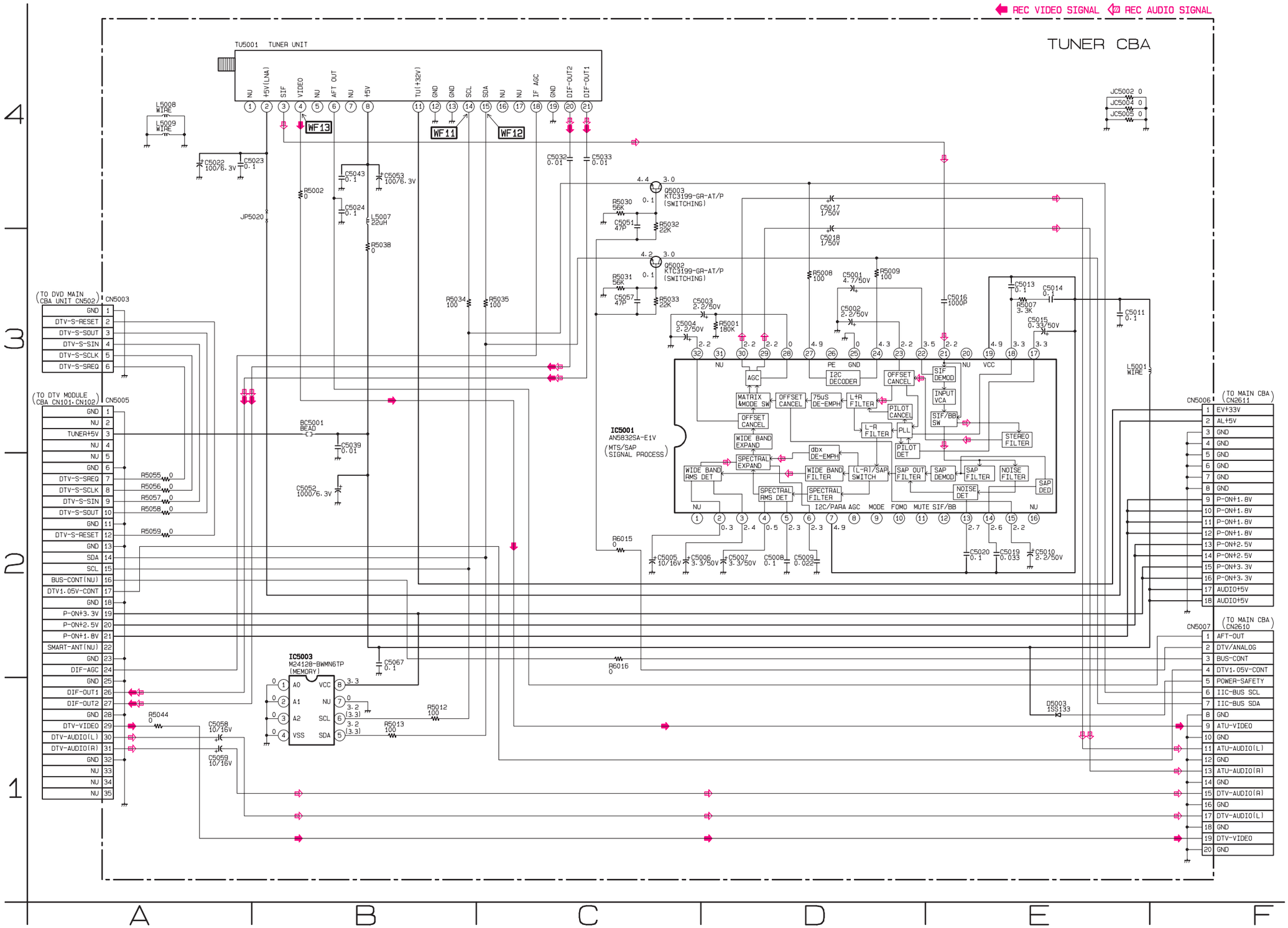
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



Front Jack Schematic Diagram



Tuner Schematic Diagram



VOLTAGE CHART

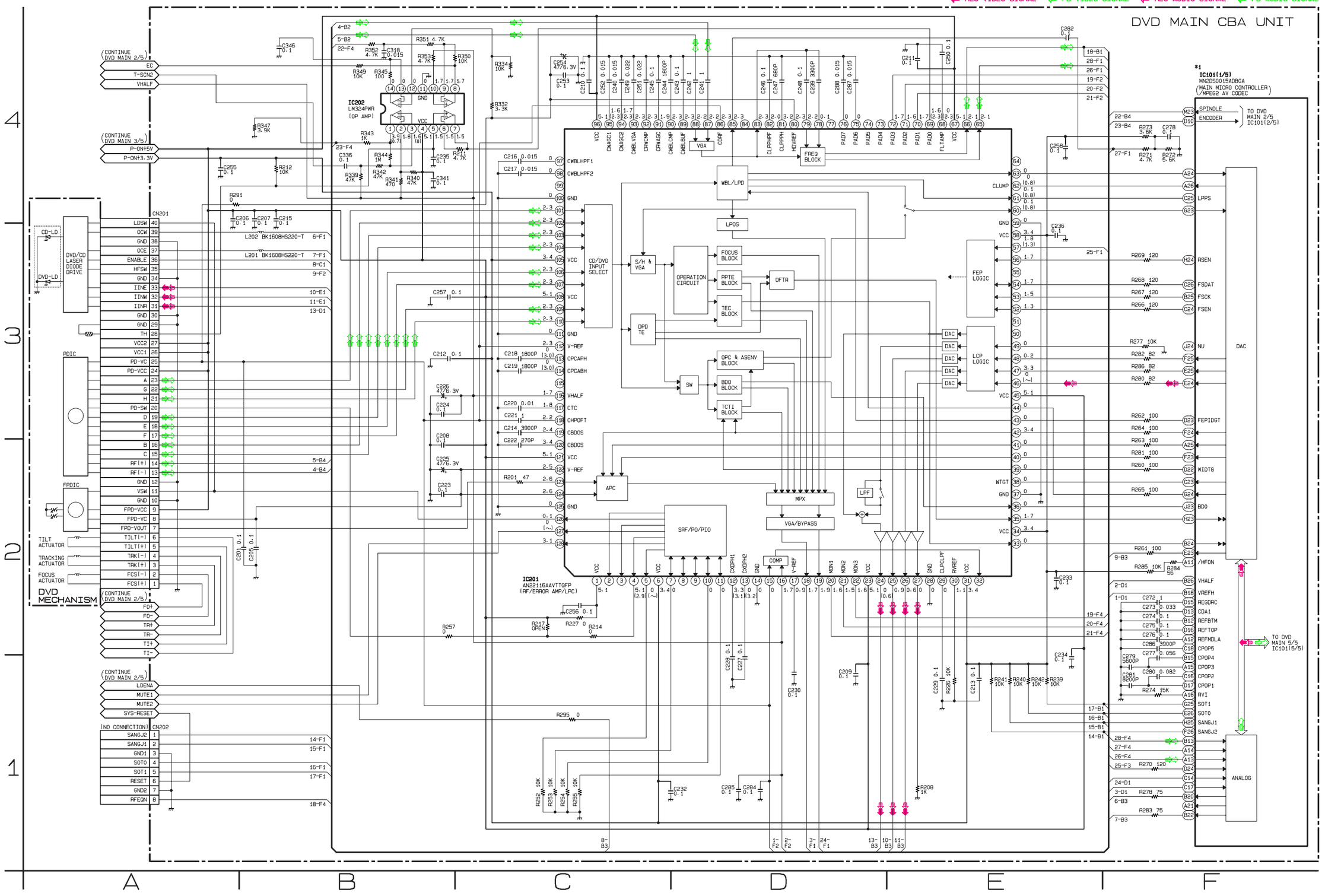
CN5005

Pin No.	Voltage
1	0
2	1.6
3	5.1
4	3.4
5	3.2
6	0
7	3.0
8	3.3
9	3.2
10	0.8
11	0
12	3.3
13	0
14	3.1
15	3.1
16	0.2
17	5.0
18	0
19	3.4
20	2.6
21	1.8
22	3.4
23	0
24	3.0
25	0
26	0
27	0
28	0
29	0.4
30	2.5
31	2.5
32	0
33	1.0
34	0.4
35	0.1

DVD Main 1/5 Schematic Diagram

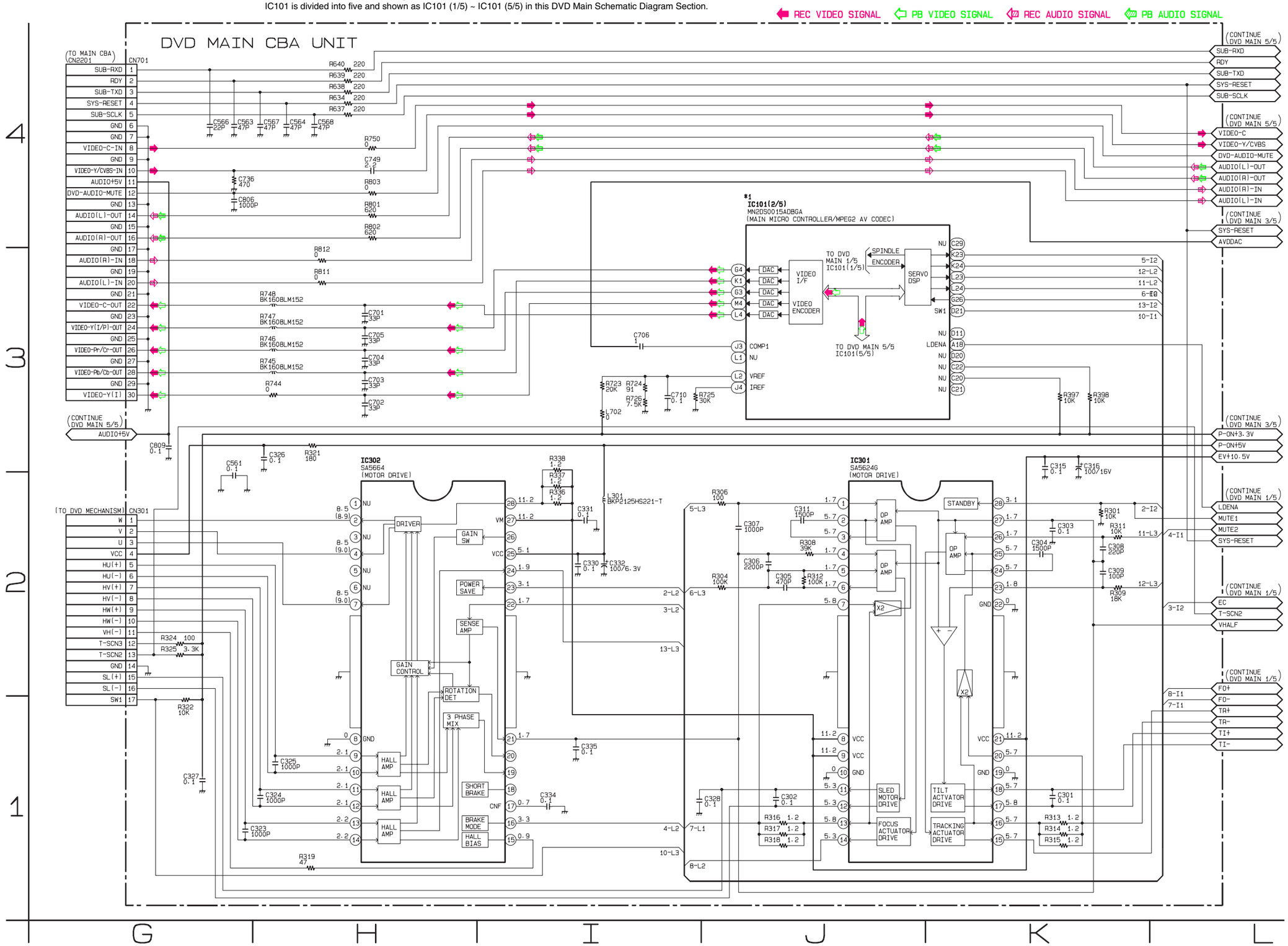
∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.

REC VIDEO SIGNAL PB VIDEO SIGNAL REC AUDIO SIGNAL PB AUDIO SIGNAL



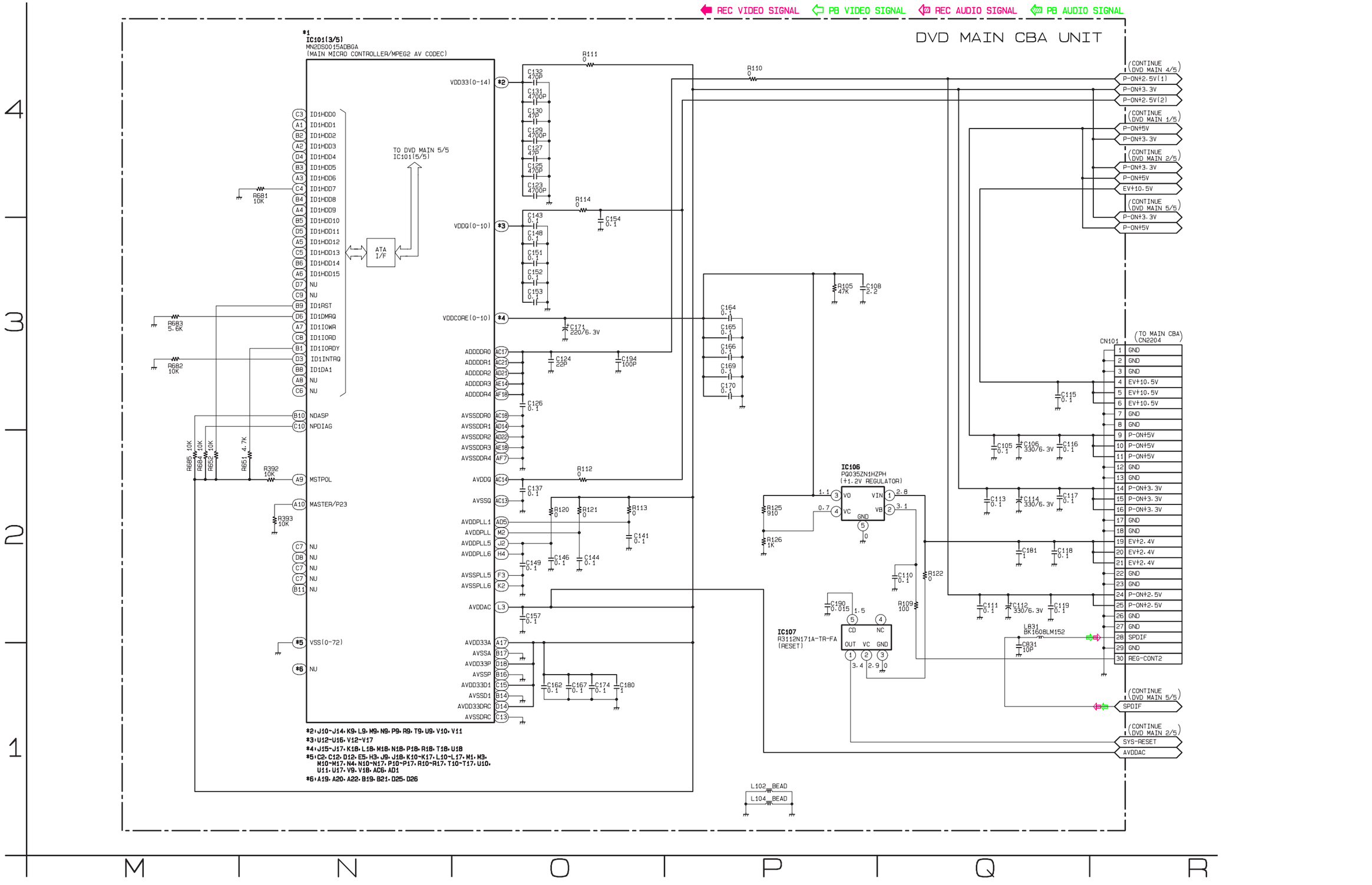
DVD Main 2/5 Schematic Diagram

*1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



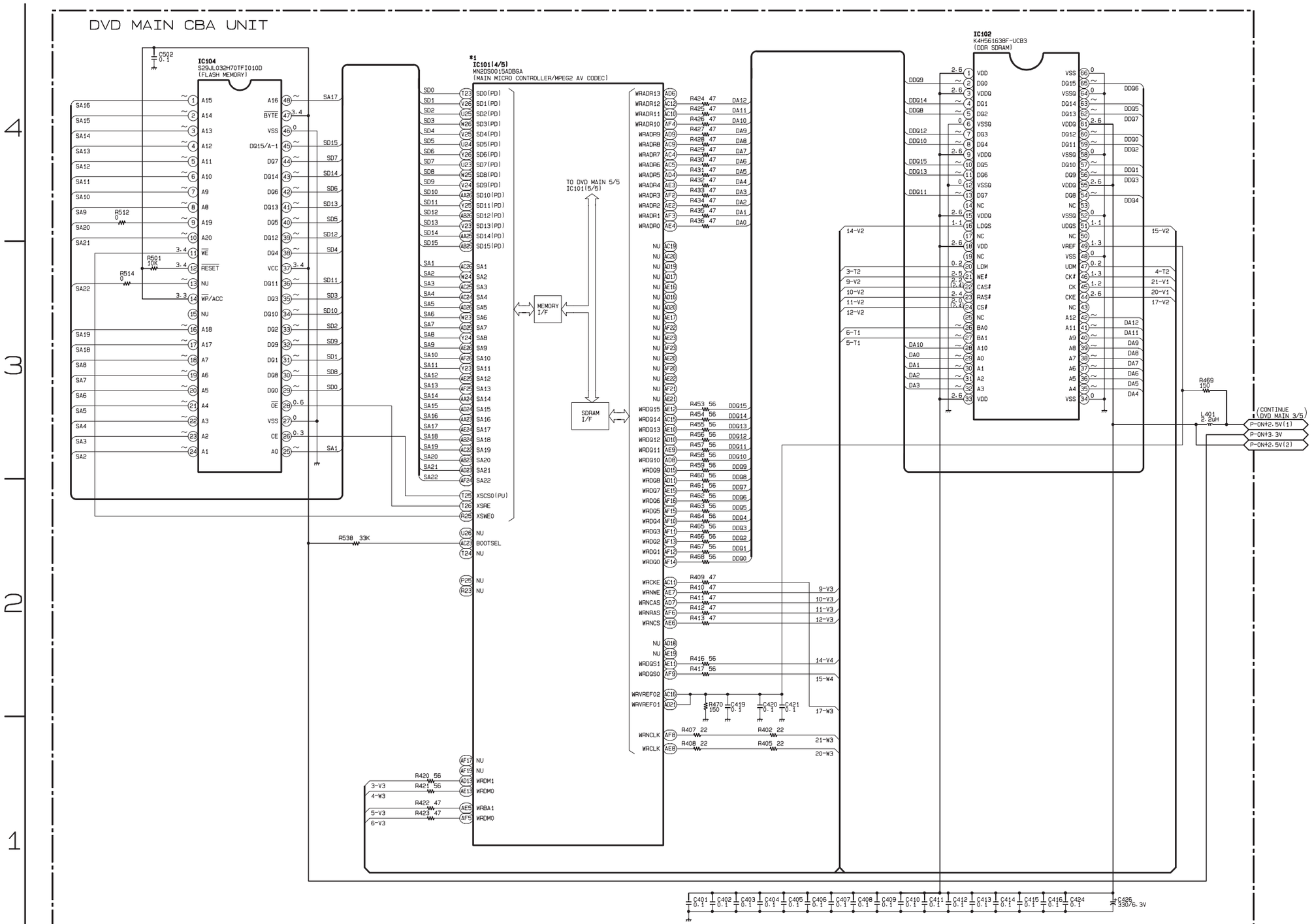
DVD Main 3/5 Schematic Diagram

*1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



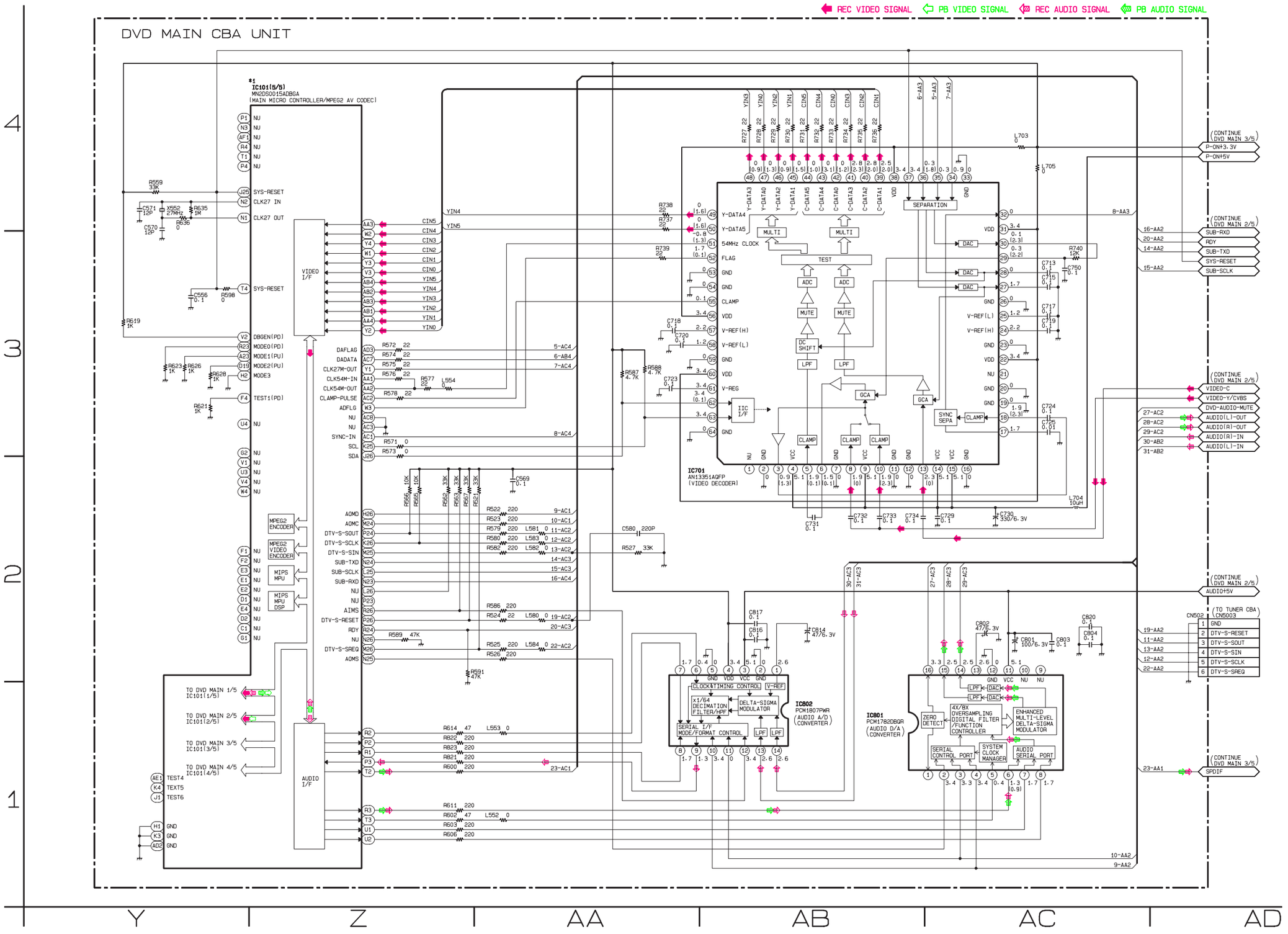
DVD Main 4/5 Schematic Diagram

*1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.

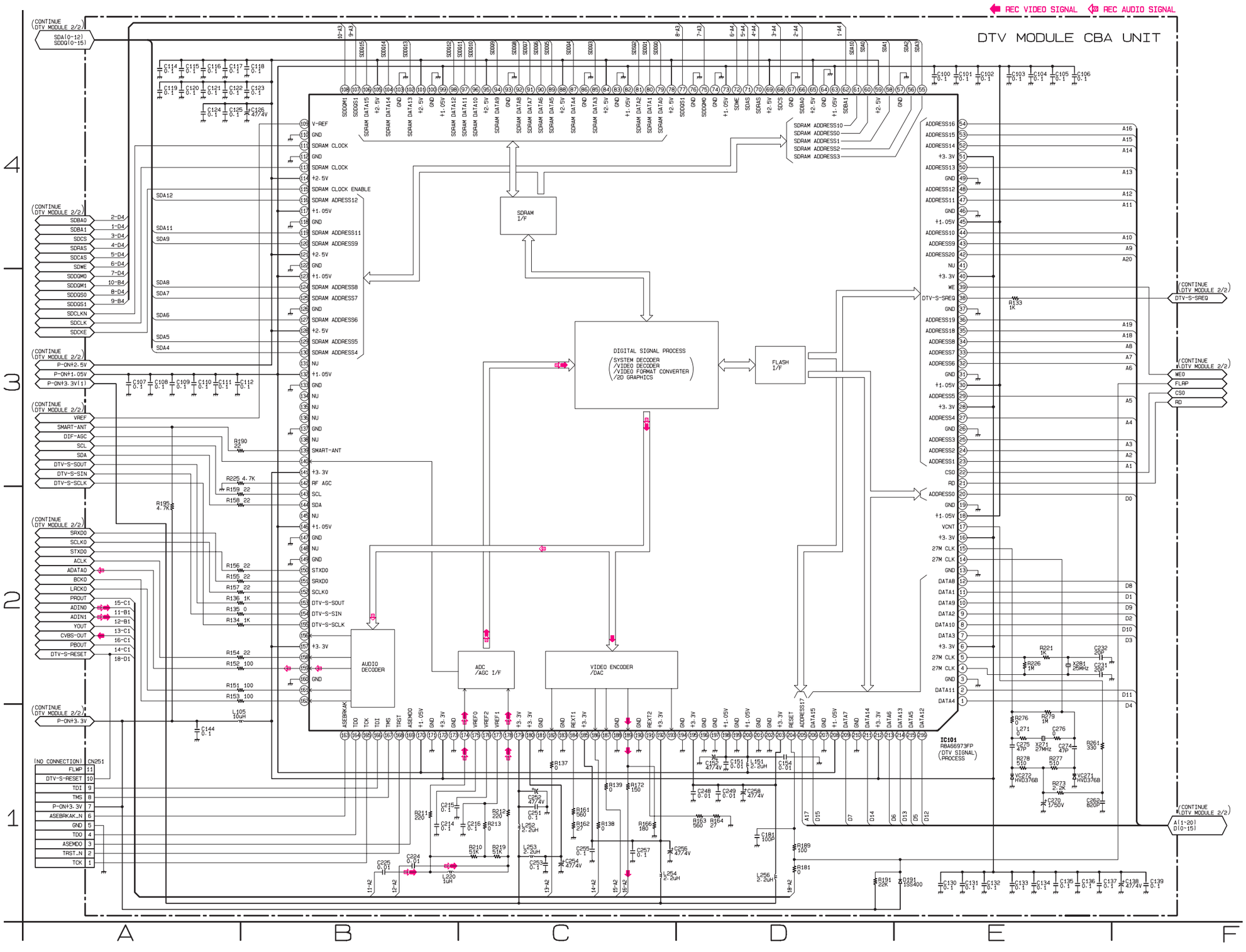


DVD Main 5/5 Schematic Diagram

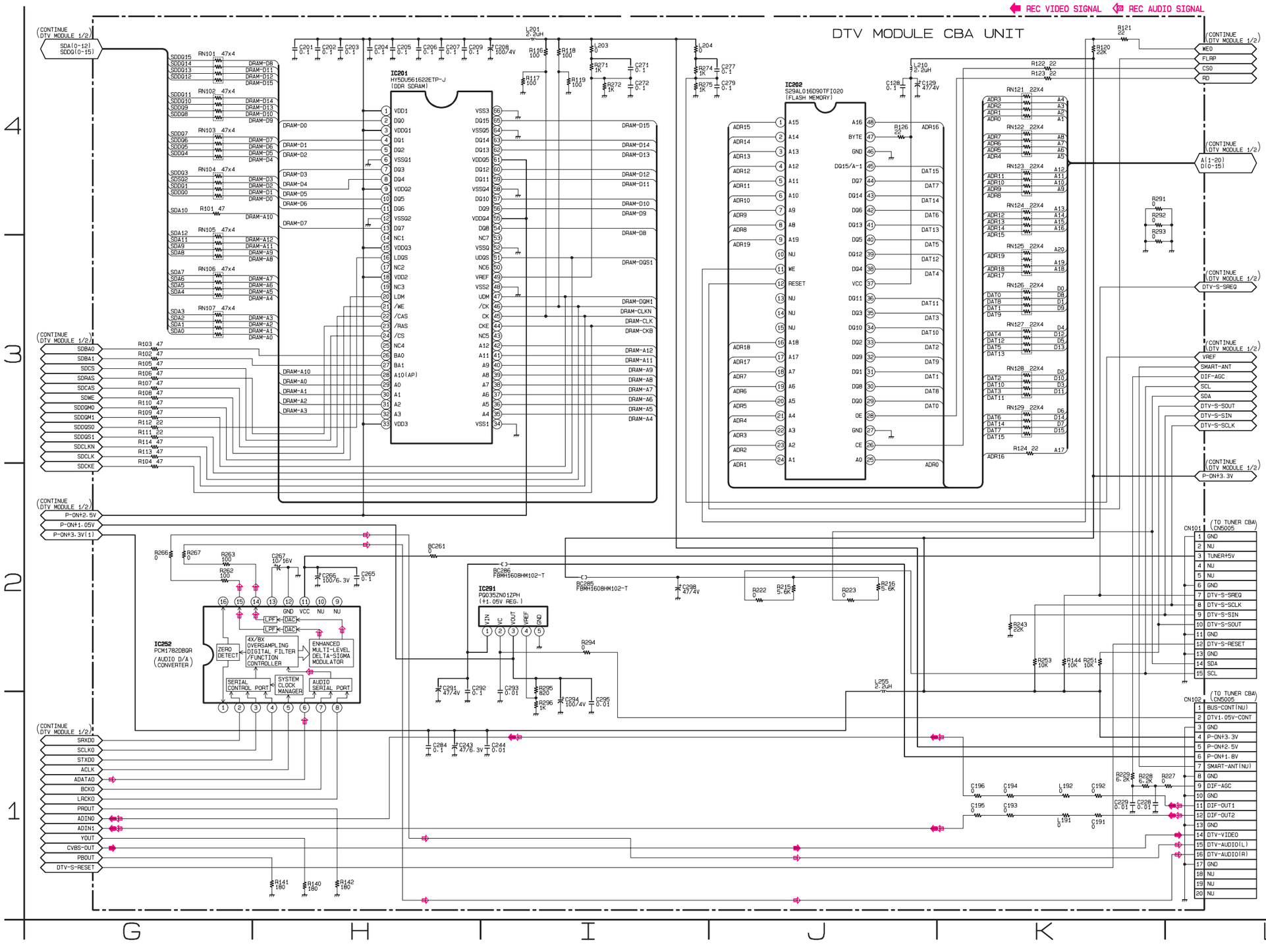
∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



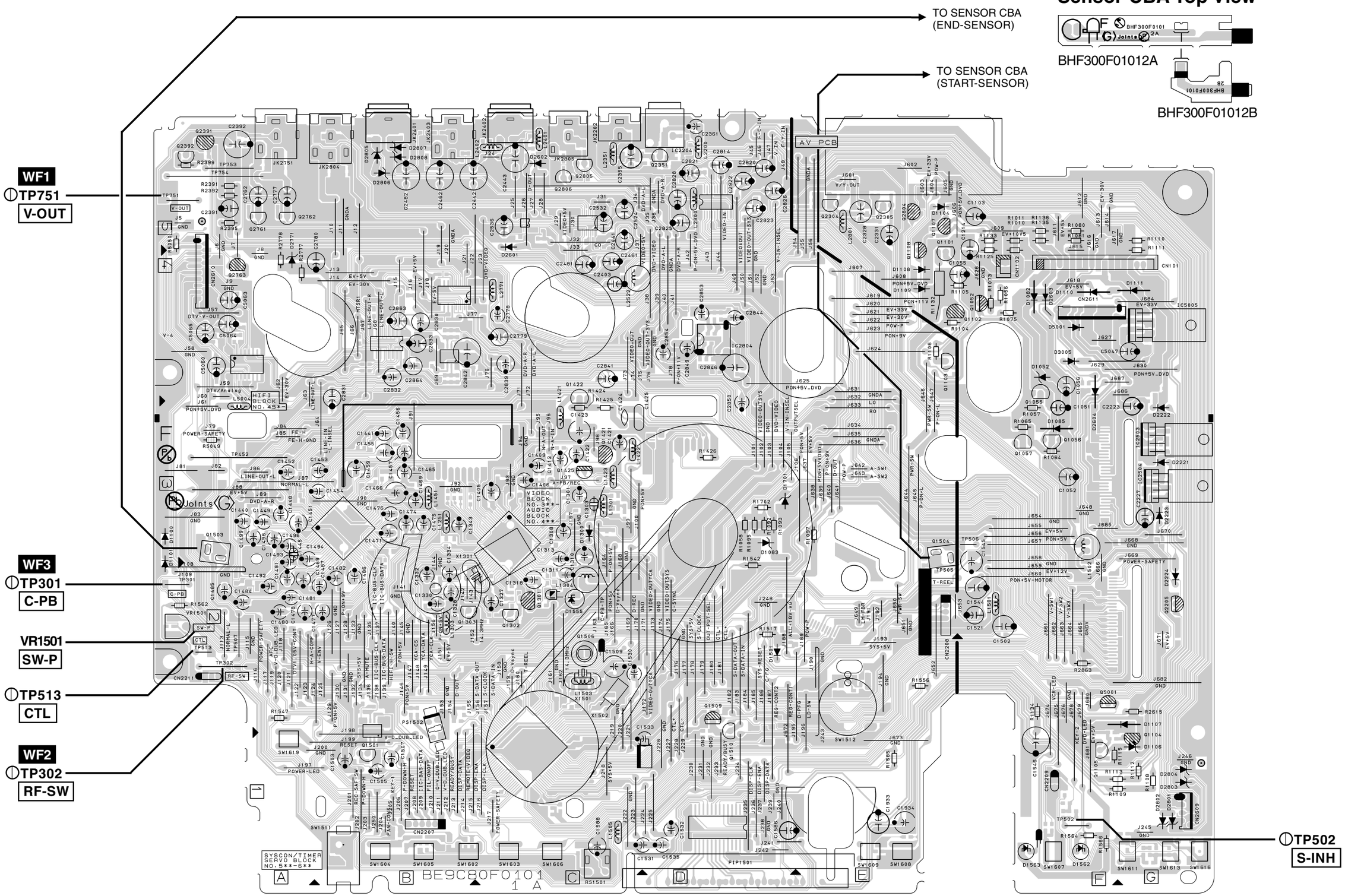
DTV Module 1/2 Schematic Diagram



DTV Module 2/2 Schematic Diagram

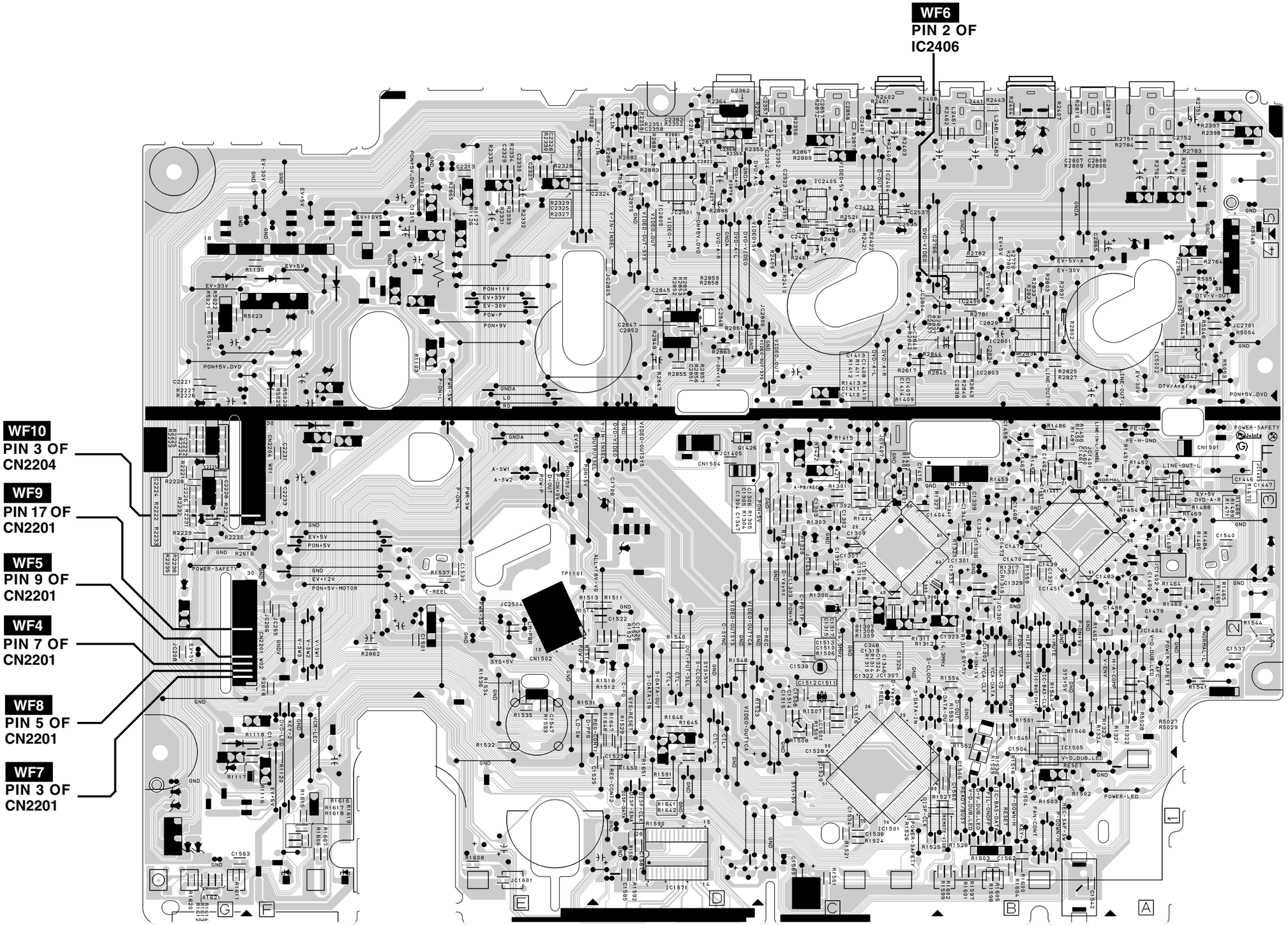


Main CBA Top View

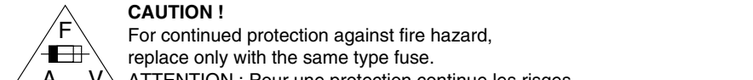


Sensor CBA Top View

Main CBA Bottom View



Power Supply CBA Top View

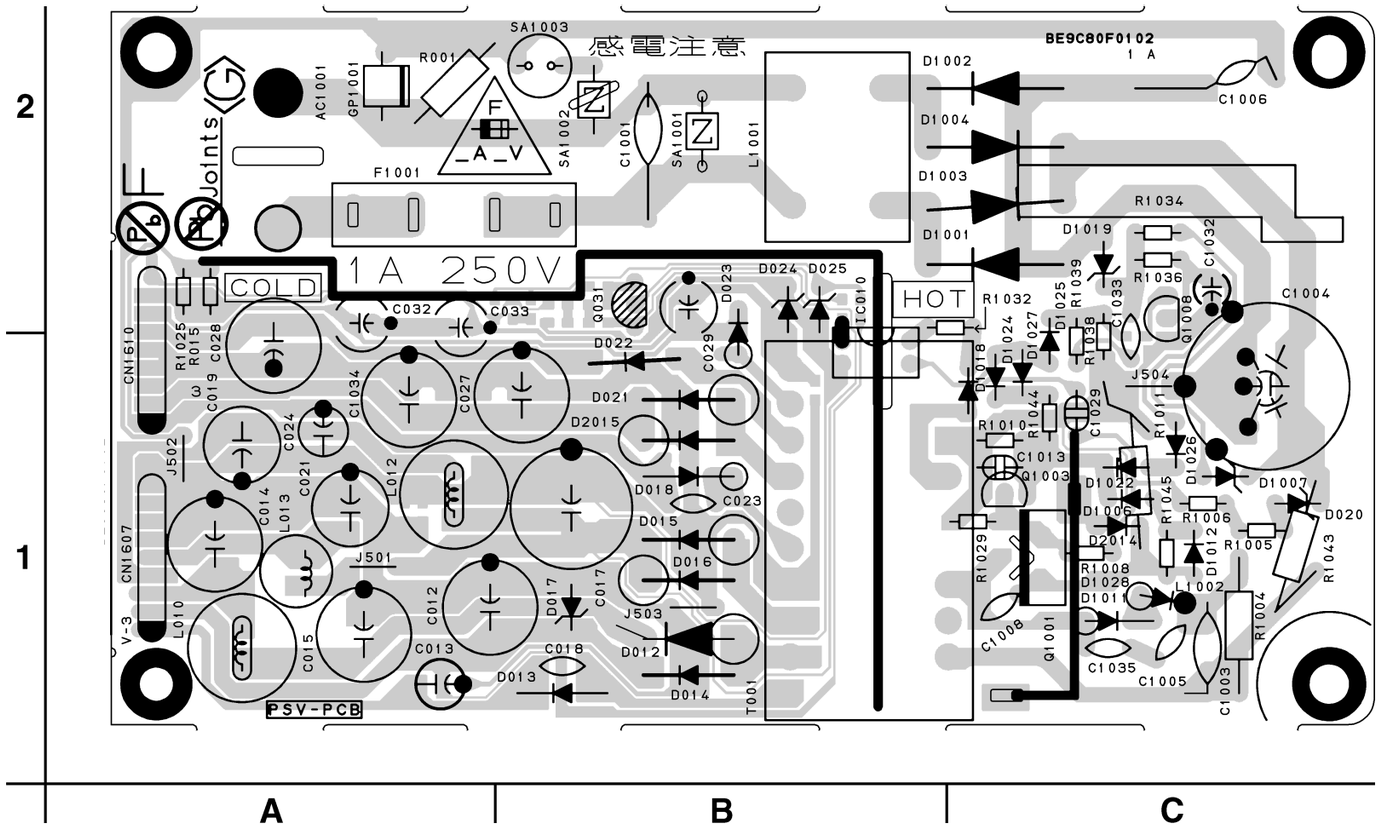


CAUTION !
For continued protection against fire hazard,
replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes
d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

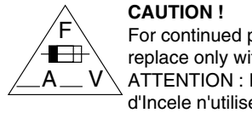
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



Power Supply CBA Bottom View

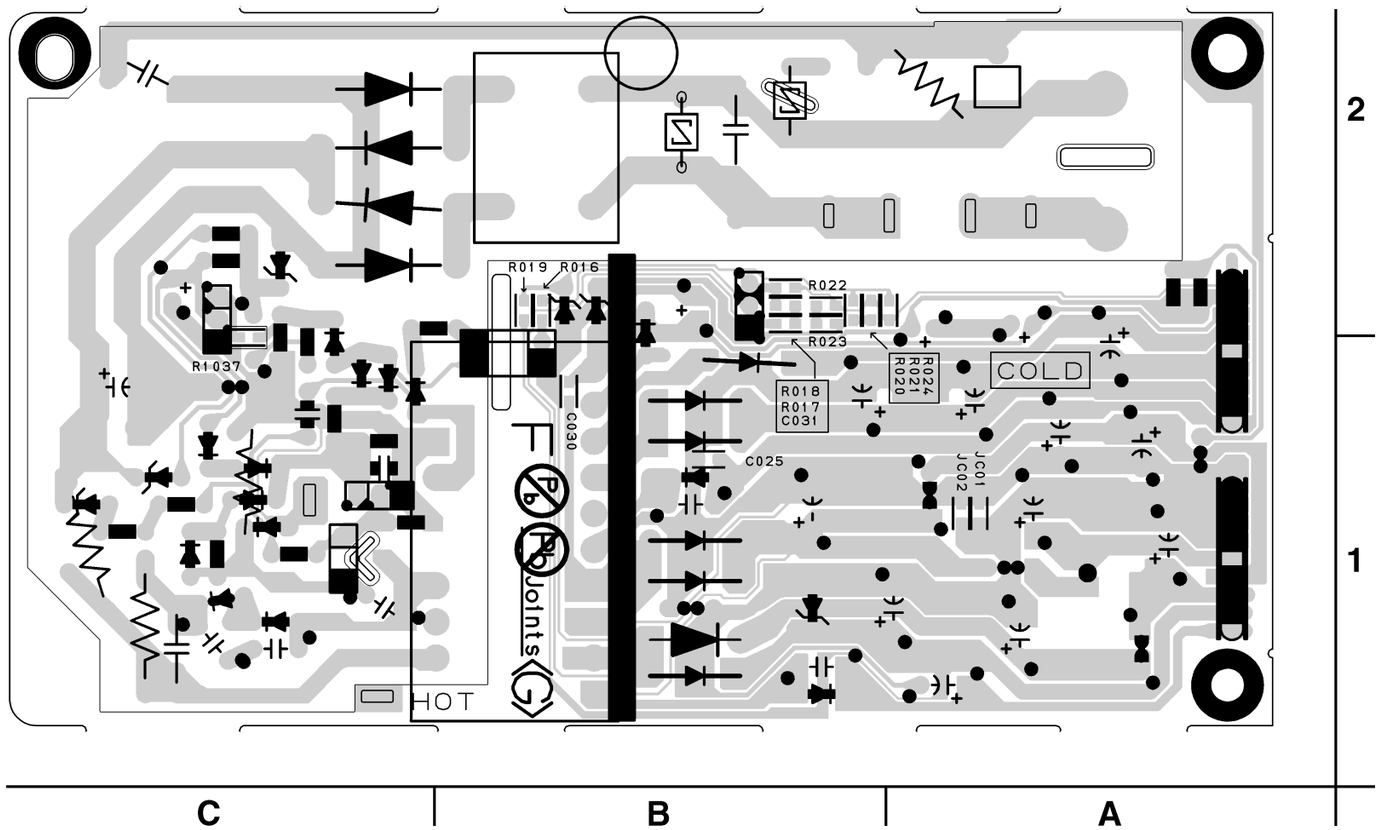


CAUTION !
For continued protection against fire hazard,
replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes
d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

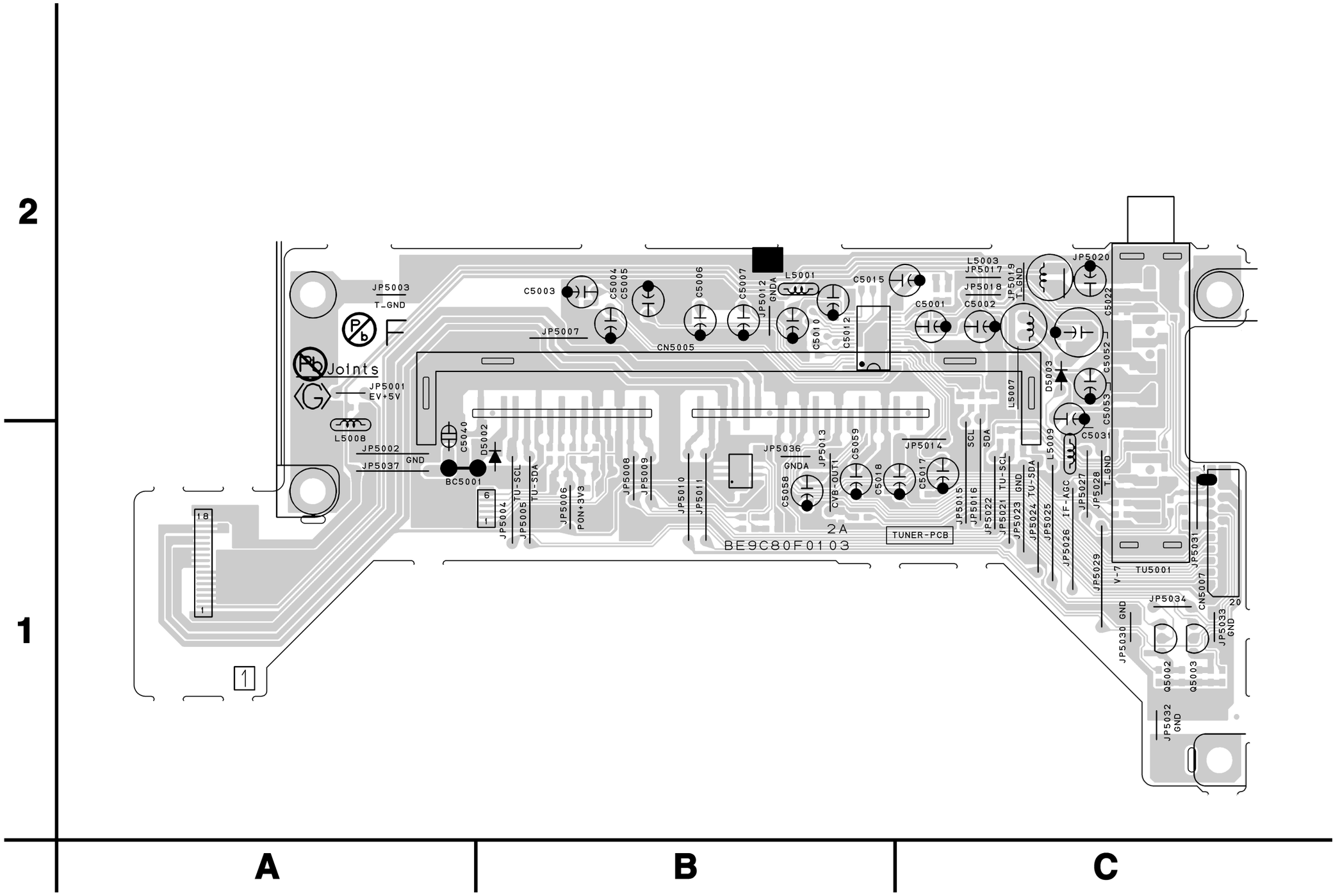
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.

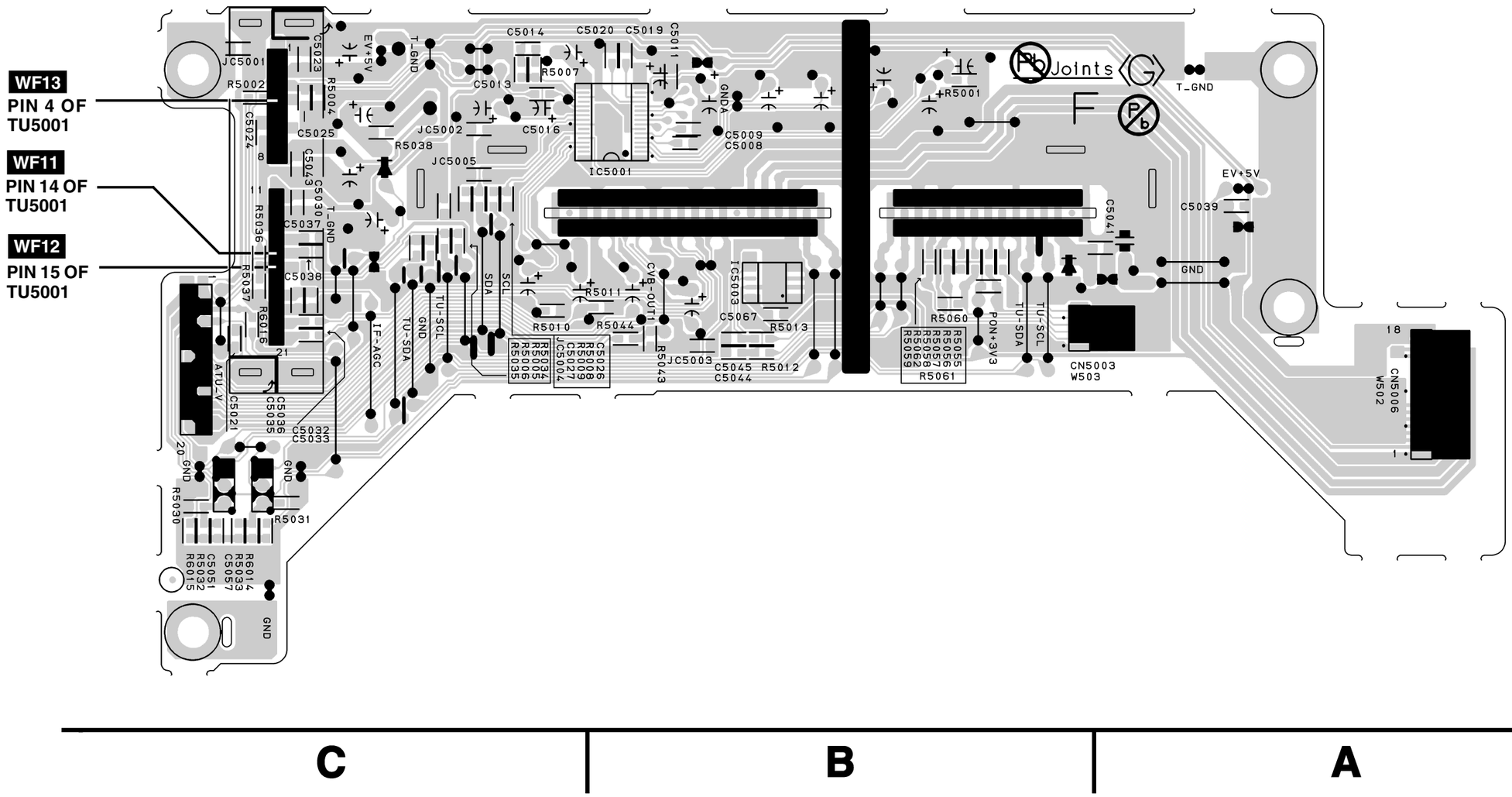
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



Tuner CBA Top View

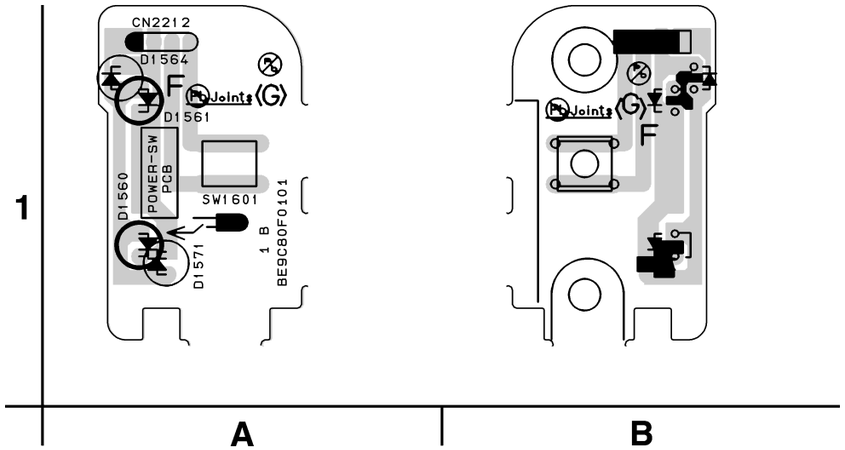


Tuner CBA Bottom View



Power SW CBA Top View

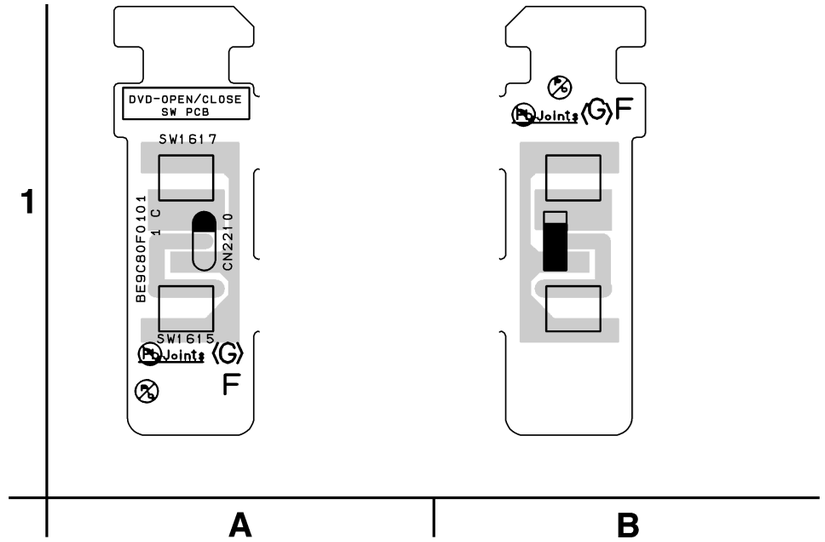
Power SW CBA Bottom View



BE9C80F01011B

DVD Open/Close SW CBA Top View

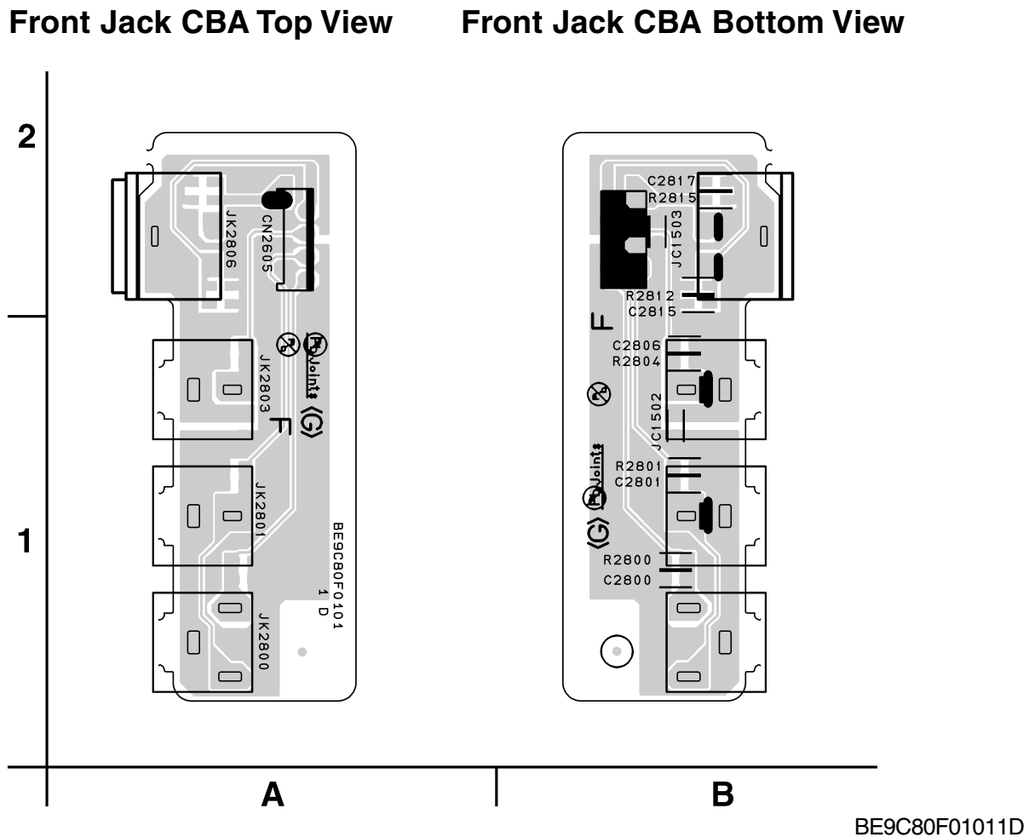
DVD Open/Close SW CBA Bottom View



BE9C80F01011C

Front Jack CBA Top View

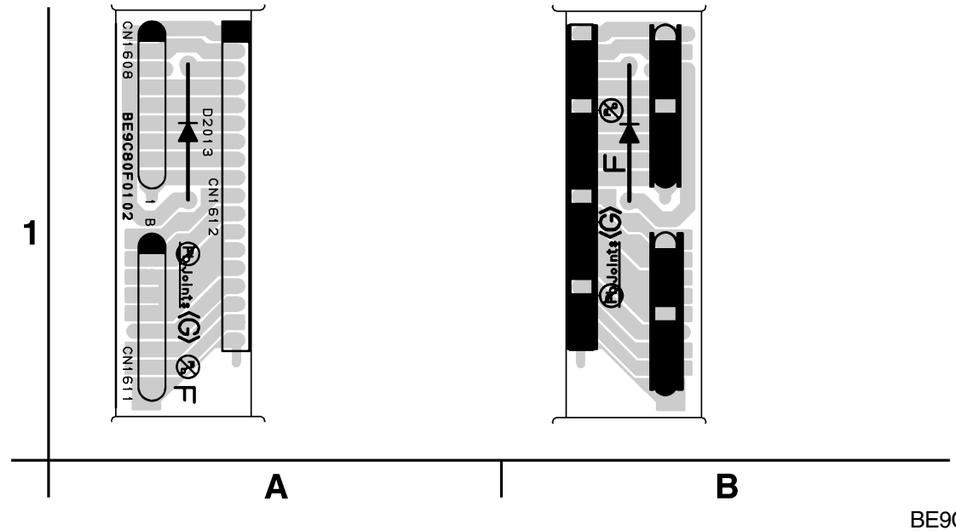
Front Jack CBA Bottom View



BE9C80F01011D

Junction CBA Top View

Junction CBA Bottom View

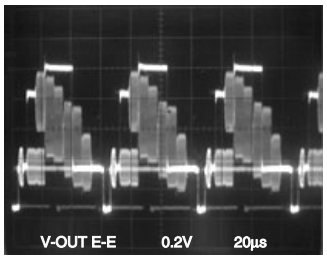


BE9C80F01021B

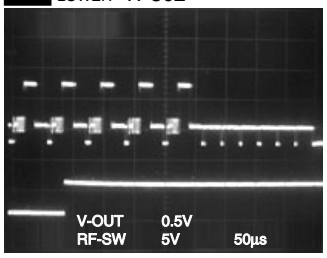
WAVEFORMS

NOTE:
Input: COLOR BAR SIGNAL (WITH 1KHz AUDIO SIGNAL)

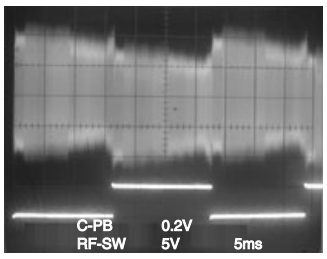
WF1 TP751



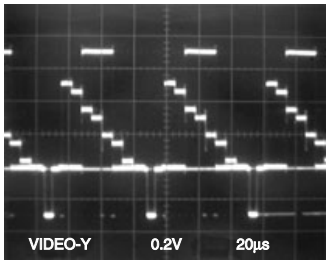
WF1 UPPER TP751
WF2 LOWER TP302



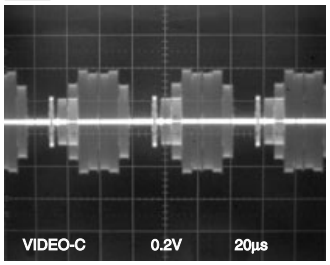
WF3 UPPER TP301
WF2 LOWER TP302



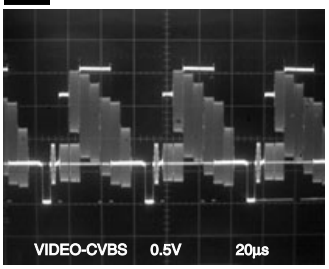
WF4 Pin 7 of CN2201



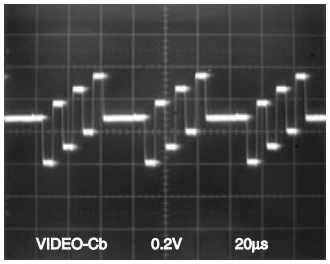
WF5 Pin 9 of CN2201



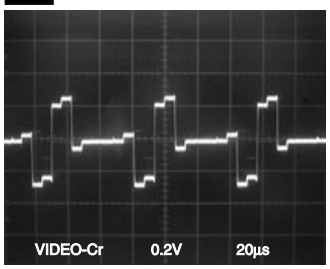
WF6 Pin 2 of IC2406



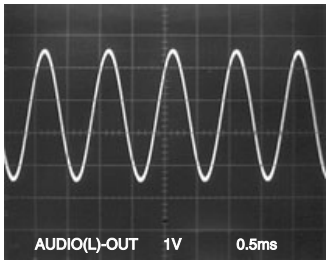
WF7 Pin 3 of CN2201



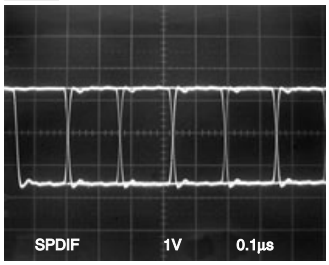
WF8 Pin 5 of CN2201



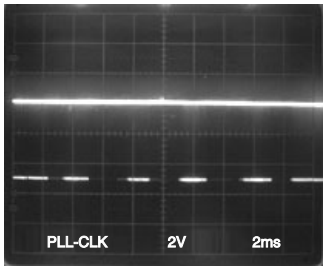
WF9 Pin 17 of CN2201



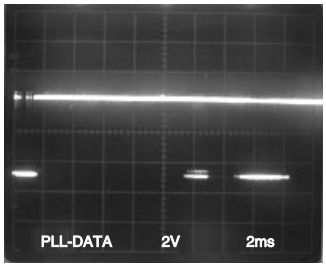
WF10 Pin 3 of CN2204



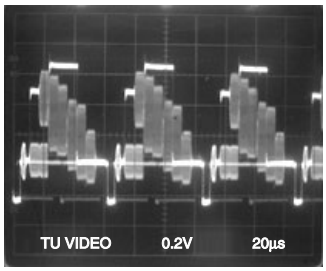
WF11 Pin 14 of TU5001



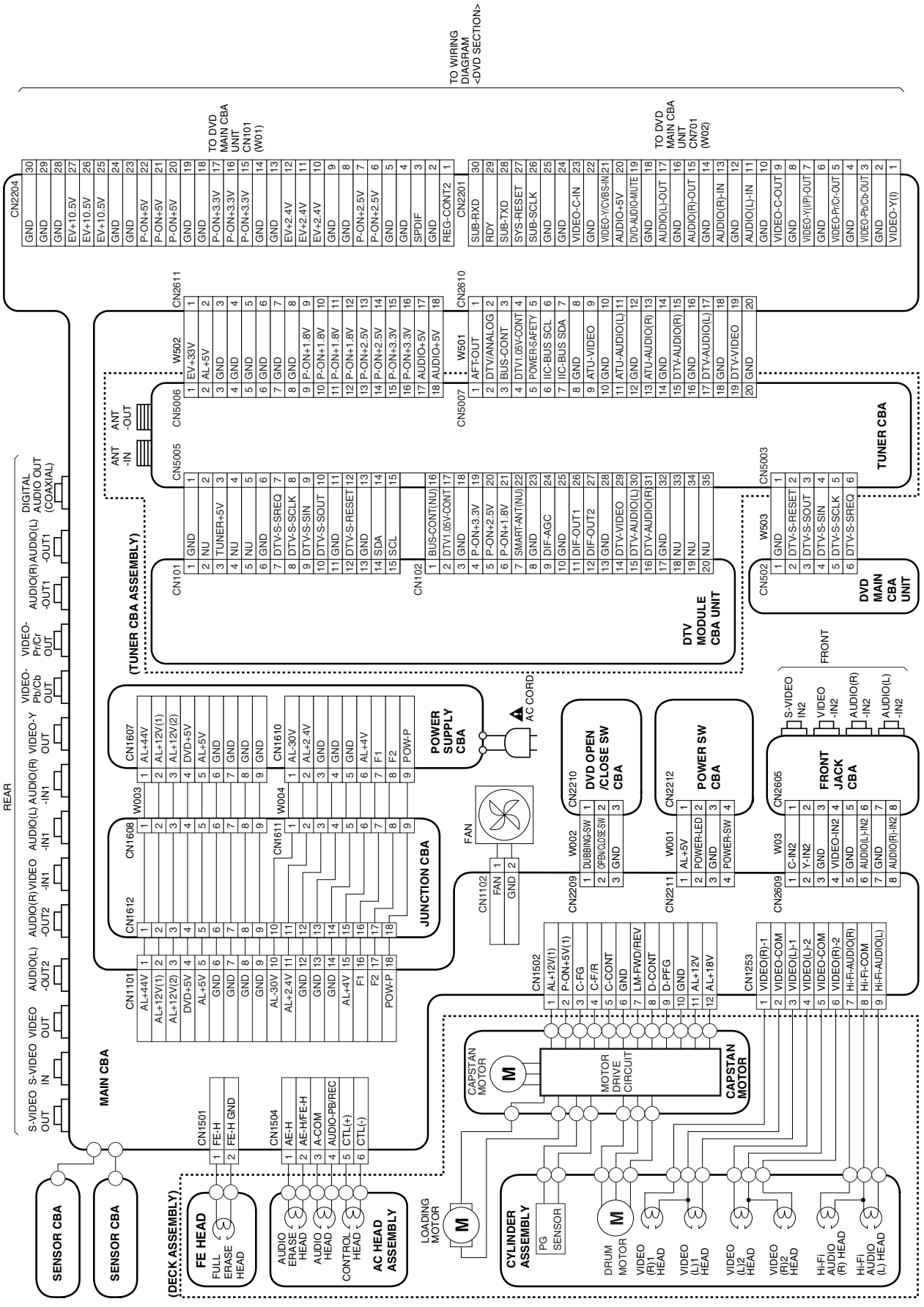
WF12 Pin 15 of TU5001



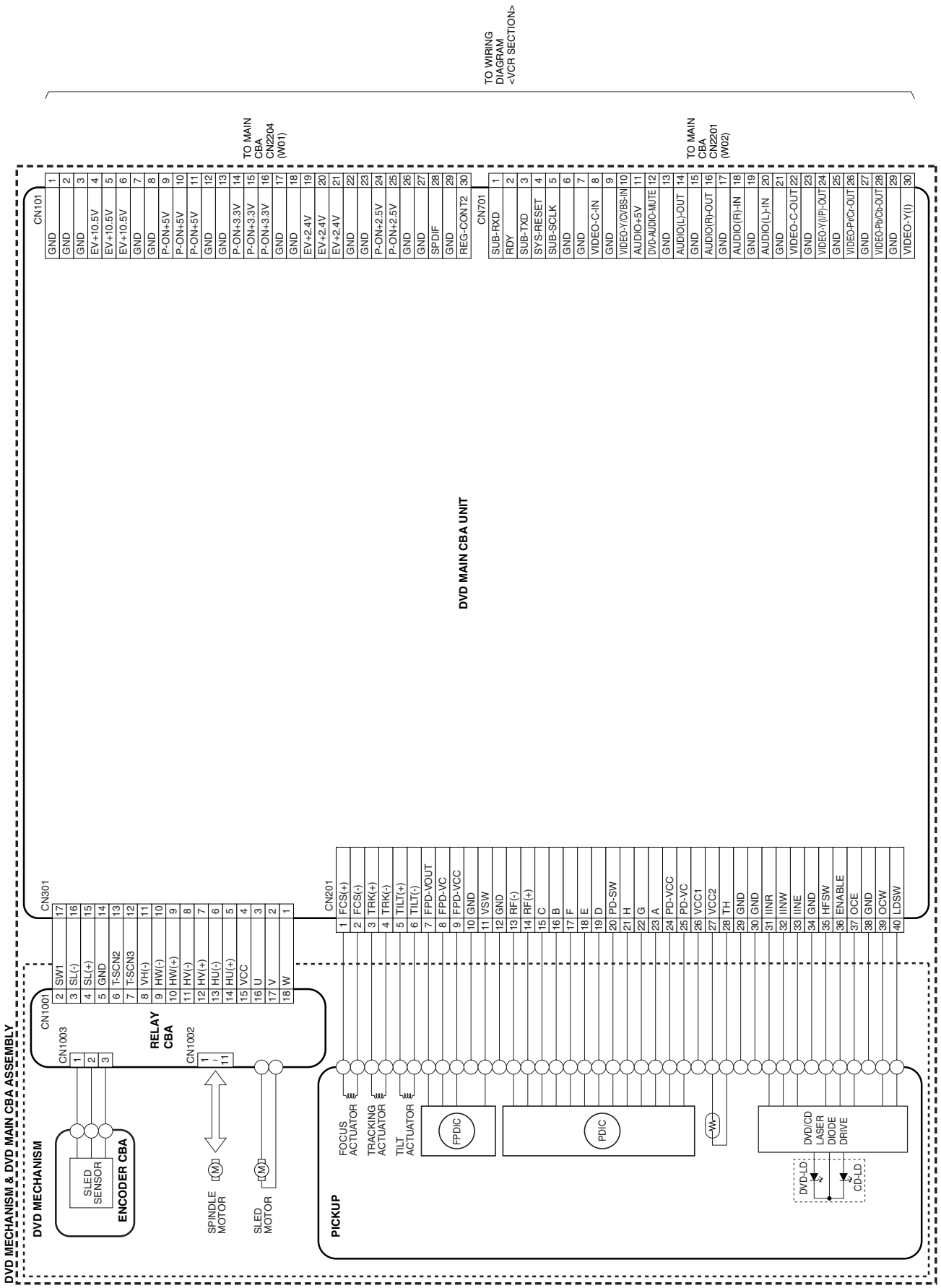
WF13 Pin 4 of TU5001



WIRING DIAGRAM < VCR SECTION >



WIRING DIAGRAM < DVD SECTION >



SYSTEM CONTROL TIMING CHARTS

< VCR Section >

Mode SW: LD-SW

LD-SW Position detection A/D Input voltage Limit (Calculated voltage)	Symbol
3.76 V ~ 4.50 V (4.12 V)	EJ
4.51 V ~ 5.00 V (5.00 V)	CL
0.00 V ~ 0.25 V (0.00 V)	SB
1.06 V ~ 1.50 V (1.21 V)	TL
0.66 V ~ 1.05 V (0.91 V)	FB
1.99 V ~ 2.60 V (2.17 V)	SF
1.51 V ~ 1.98 V (1.80 V)	SM
3.20 V ~ 3.75 V (3.40 V)	AU
0.26 V ~ 0.65 V (0.44 V)	AL
4.51 V ~ 5.00 V (5.00 V)	SS
2.61 V ~ 3.19 V (2.97 V)	RS

Note:

Note: EJ ⟶ RS: Loading FWD (LM-FWD / REV “H”)
RS ⟶ EJ: Loading REV (LM-FWD / REV “L”)
Stop (A) = Loading
Stop (B) = Unloading

Note:

Symbol	Loading Status
EJ	Eject
CL	Eject ~ REW Reel
SB	REW Reel ~ Stop (B)
TL	Stop (B) ~ Brake Cancel
FB	Brake Cancel ~ FF / REW
SF	FF / REW ~ Stop (M), (FF / REW)
SM	Stop (M), (FF / REW) ~ Stop (A)
AU	Stop (A) ~ Play / REC
AL	Play / REC ~ Still / Slow
SS	Still / Slow ~ RS (REW Search)
RS	RS (REW Search)

Still/Slow Control Frame Advance Timing Chart

1) SP Mode

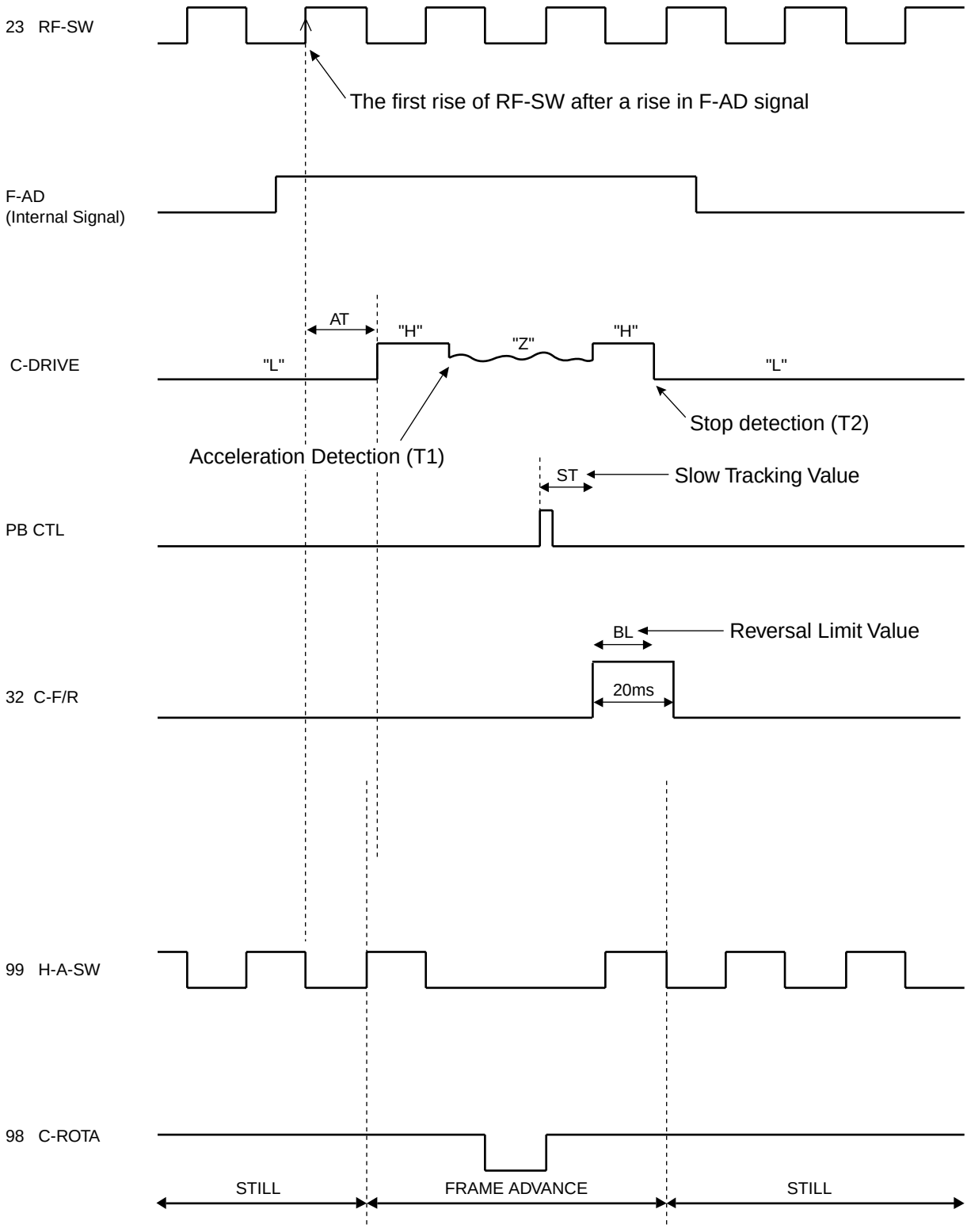


Fig. 1

2) LP/SLP Mode

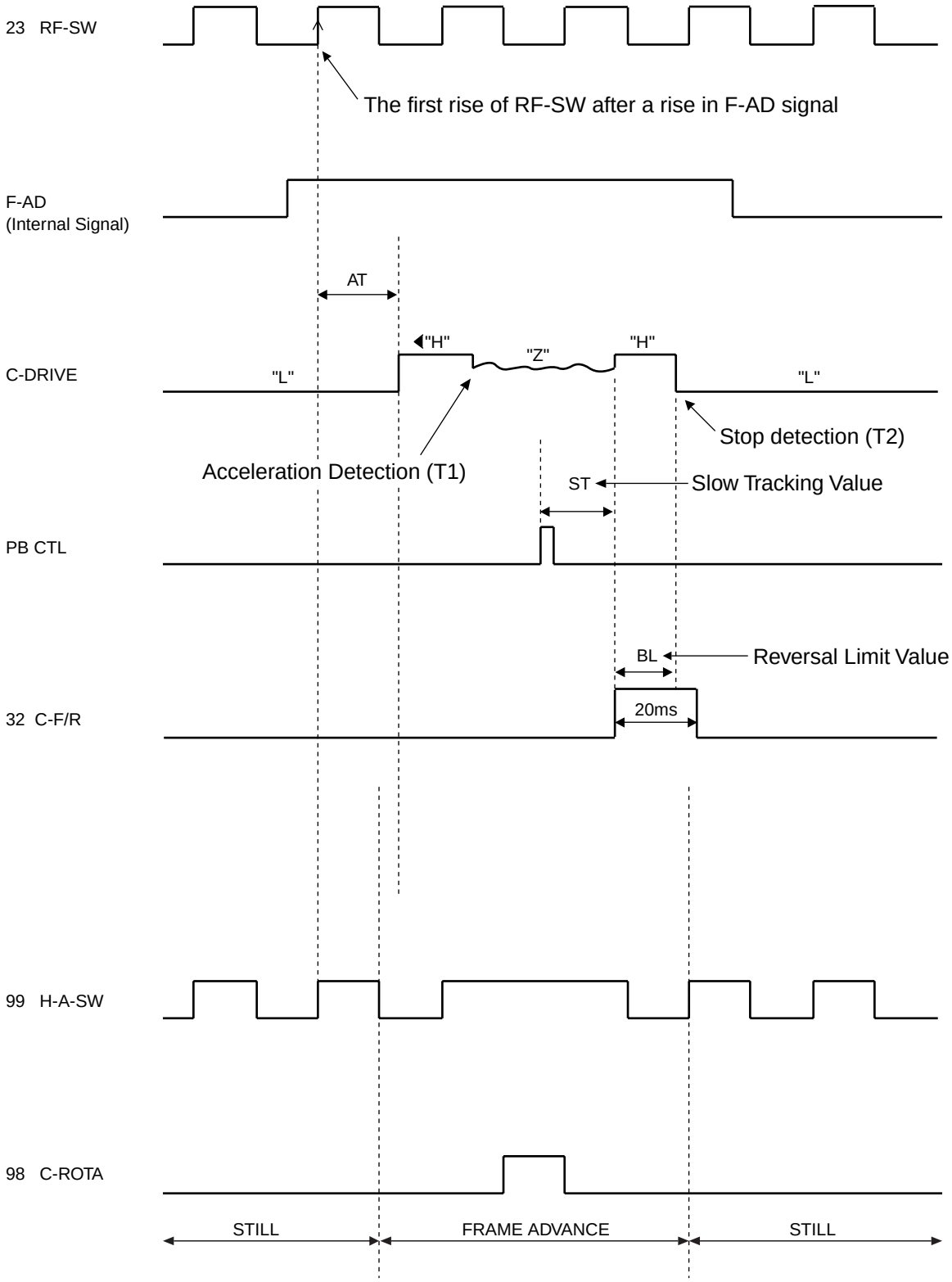


Fig. 2

1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL -> PLAY -> STOP(A)

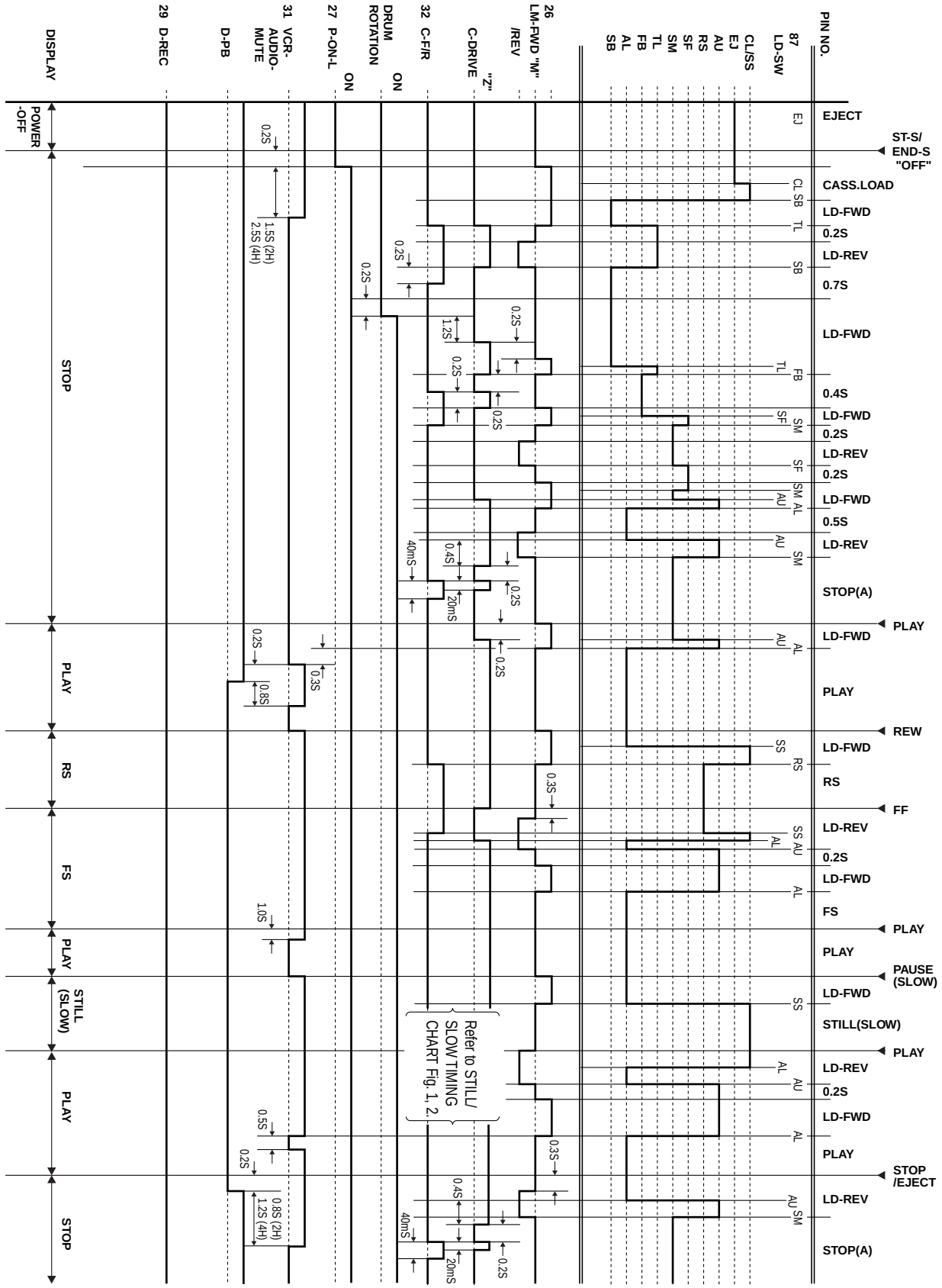


Fig. 3

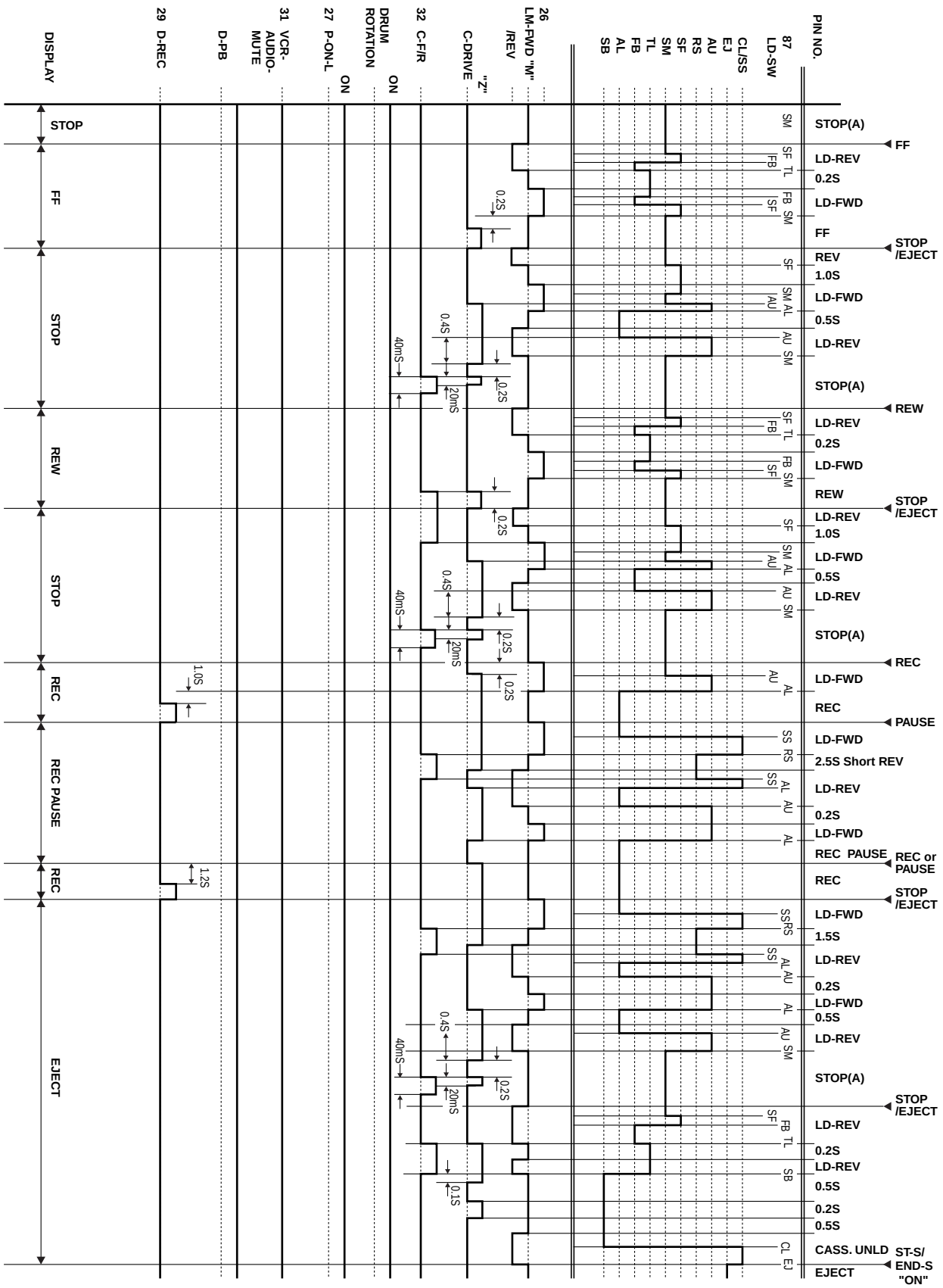
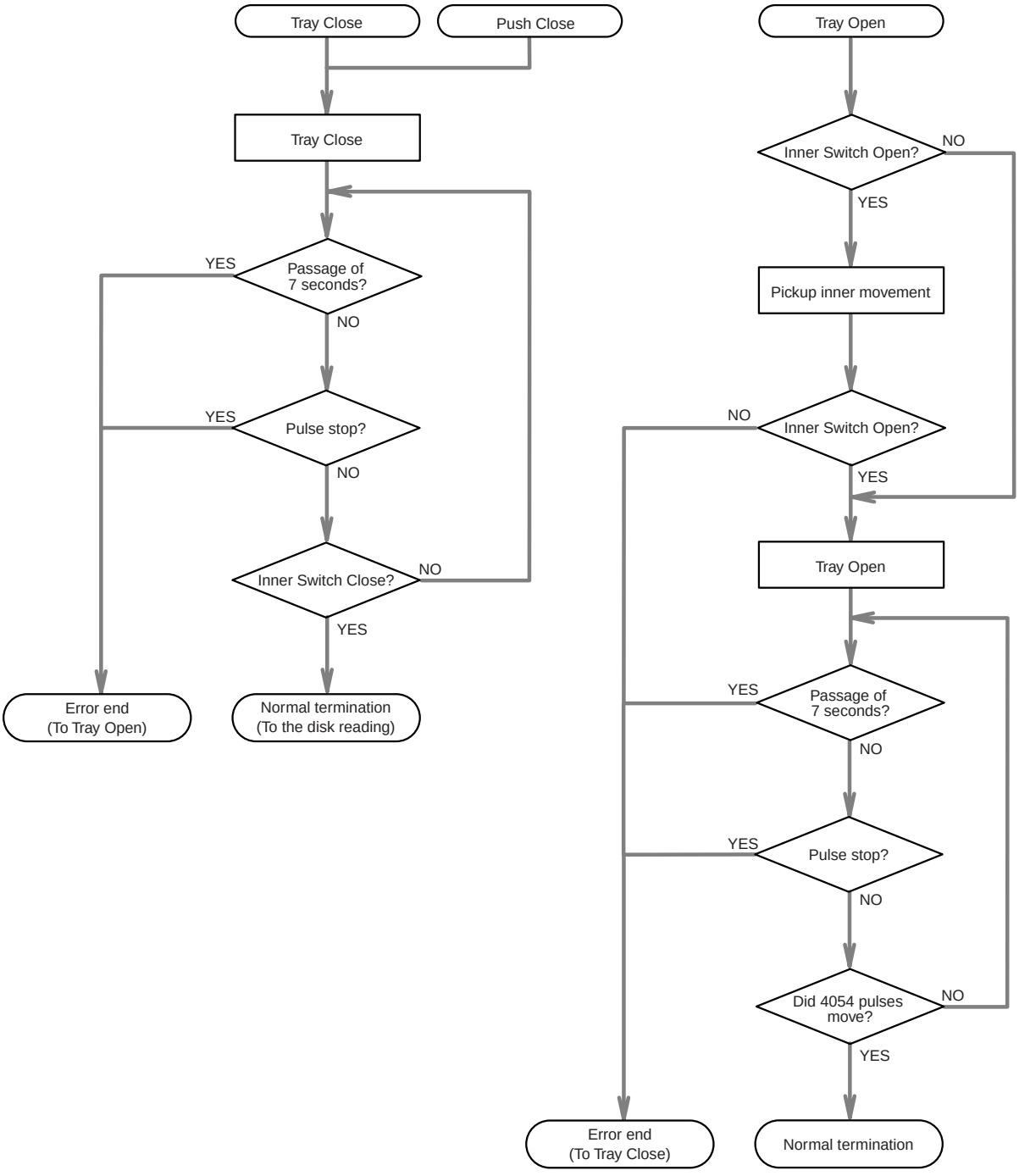
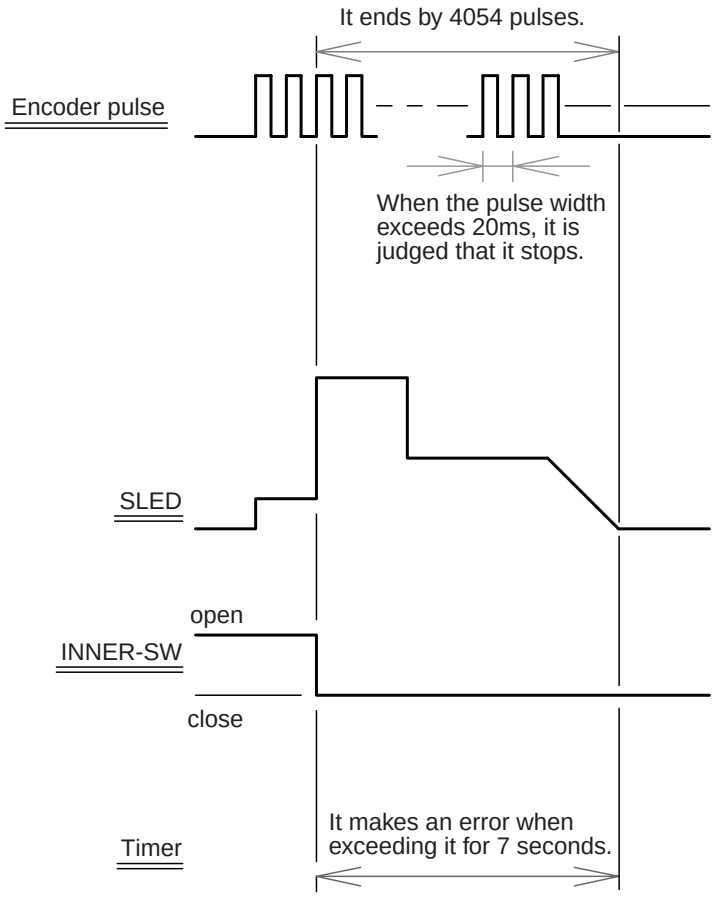

2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
87 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
26 LM-FWD "M" /REV
"Z" C-DRIVE
32 C-F/R
DRUM ROTATION
27 P-ON-L
31 VCR-AUDIO-MUTE
D-PB
29 D-REC
DISPLAY
ON
STOP
FF
STOP
REW
STOP
REC
REC PAUSE
REC
EJECT
STOP(A)
FF
LD-REV
0.2S
LD-FWD
FF
STOP /EJECT
REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REW
LD-REV
0.2S
LD-FWD
REW
STOP /EJECT
LD-REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REC
LD-FWD
REC
PAUSE
LD-FWD
2.5S Short REV
LD-REV
0.2S
LD-FWD
REC PAUSE
REC or PAUSE
REC
STOP /EJECT
LD-FWD
1.5S
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
STOP /EJECT
LD-REV
0.2S
LD-REV
0.5S
0.2S
0.5S
CASS. UNLD
EJECT
ST-S/ END-S "ON"
0.2S
0.4S
40mS
20mS
0.1S
1.0S
1.2S

Fig. 4

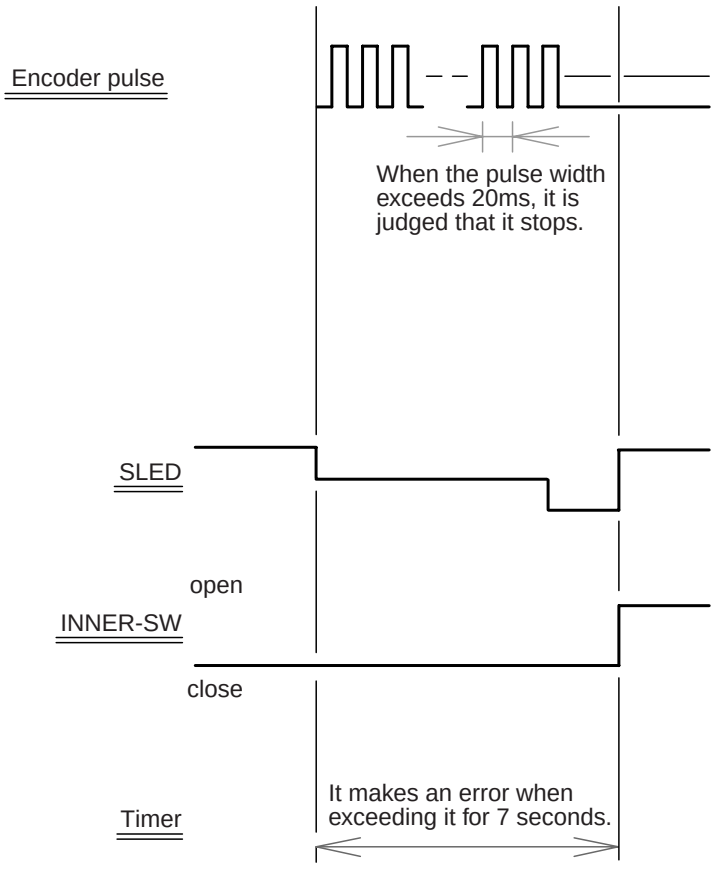
< DVD Section >


Tray Close
Push Close
Tray Close
Passage of 7 seconds?
YES
NO
Pulse stop?
YES
NO
Inner Switch Close?
NO
YES
Error end (To Tray Open)
Normal termination (To the disk reading)
Tray Open
Inner Switch Open?
NO
YES
Pickup inner movement
Inner Switch Open?
NO
YES
Tray Open
Passage of 7 seconds?
YES
NO
Pulse stop?
YES
NO
Did 4054 pulses move?
NO
YES
Error end (To Tray Close)
Normal termination

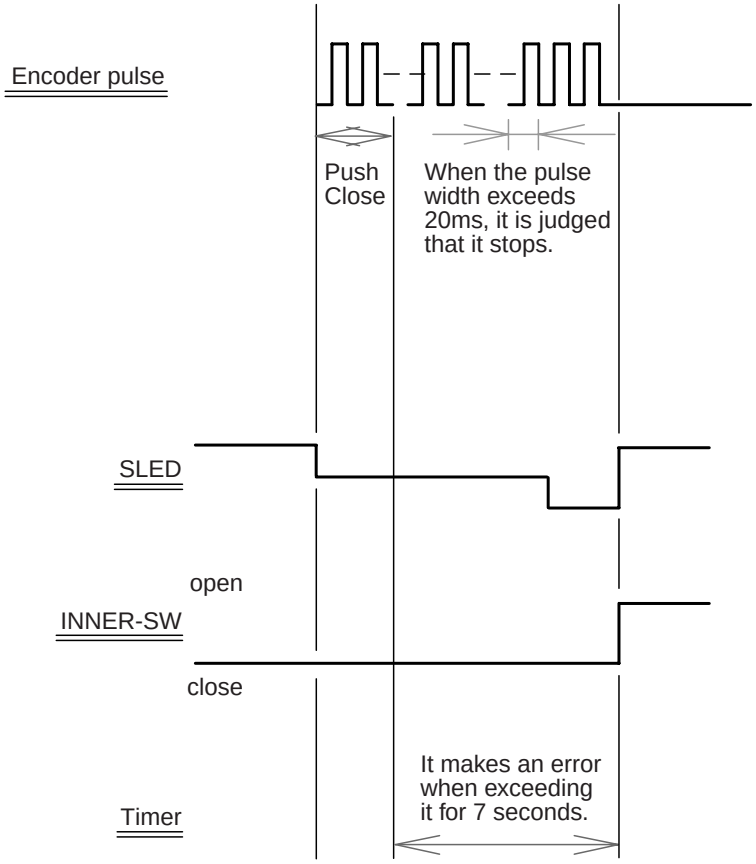
Tray open



Tray close



Push close



Parameter

Parameter	OPEN	CLOSE
The maximum movement speed	0x3200	0x3200
Pulse width of encoder in which error end is done	20ms	20ms
Number of movement encoder pulses	4054	- (Until an inner switch is turned off)
Number of deceleration beginning remainder encoder pulses	224	100

IC PIN FUNCTION DESCRIPTIONS

< VCR Section >

IC1501 (SERVO/SYSTEM CONTROL/OSD)

"H" ≥ 4.5 V, "L" ≤ 1.0 V

Pin No.	IN/ OUT	Signal Name	Function
1	IN	P-DOWN -H	Power Voltage Down Detector Signal
2	IN	READY/ BUSY	Ready/Busy Communication Control with Main Micro Controller
3	IN	T-REEL	Take Up Reel Rotation Signal
4	-	NU	Not Used
5	IN	REMOCON -IN	Remote Control Sensor
6	OUT	DISPLAY-ENA	FL Display Driver IC Enable Control Output Signal
7	OUT	DISPLAY-DATA	FL Display Driver IC Data Control Output Signal
8	OUT	DISPLAY-CLK	FL Display Driver IC Clock Control Output Signal
9	-	NU	Not Used
10	-	NU	Not Used
11	OUT	S-CLK	Communication of Clock with VCR Micro Controller
12	IN	S-DATA-IN	Communication of Data to VCR Micro Controller
13	OUT	S-DATA-OUT	Communication of Data from VCR Micro Controller
14	-	NU	Not Used
15	-	NU	Not Used
16	-	NU	Not Used
17	IN/ OUT	IIC-BUS-SDA	IIC BUS Control Data
18	OUT	IIC-BUS-SCL	IIC BUS Control Clock
19	OUT	YCA-SCL	YCA IC Control Clock
20	OUT	YCA-SDA	YCA IC Control Data
21	OUT	YCA-CS	YCA IC Control Chip Select
22	IN	REC-SAF-SW	Recording Safety SW Detect (With Record tab = "L"/ Without Record tab = "H")
23	OUT	RF-SW	Video Head Switching Pulse
24	OUT	D-V SYNC	Dummy V-sync Output
25	IN	RESET	System Reset Signal (Reset="L")
26	OUT	LM-FWD/ REV	Loading Motor FWD/ REV Output
27	OUT	P-ON-L	Power On Signal to Low
28	-	NU	Not Used
29	OUT	D-REC	Delayed Record Signal
30	OUT	Hi-Fi-H-SW	Hi-Fi Audio Head Switching Pulse
31	OUT	VCR-AUDIO-MUTE	VCR Audio Mute Control Signal
32	OUT	C-F/R	Capstan Motor FWD/REV Control Signal (FWD="L"/ REV="H")
33	OUT	C-CONT	Capstan Motor Control Signal
34	-	NU	Not Used
35	OUT	POW-P	Power Supply Intermittent Pulse Signal Output
36	-	VDD	VDD (AL+5V)
37	OUT	OSCO	Main Clock Output 14.31818MHz
38	IN	OSCI	Main Clock Input 14.31818MHz
39	-	VSS	VSS (GND)
40	IN	XI	Main Clock Input
41	OUT	XO	Main Clock Output
42	IN	SXI	Operation Mode Selecting Input Signal
43	OUT	PWR-SW	DVD Power Supply Control Signal
44	IN	SYS-RESET	System Reset Signal (Reset="L")
45	OUT	REG-CONT2	Power Regulator Control Signal
46	OUT	REG-CONT1	Power Regulator Control Signal
47	OUT	VIDEO-OUT	Composite Video Signal Output
48	-	Vss	VSS (GND)
49	IN	VIDEO-IN	Composite Video Signal Input
50	IN	C-SYNC-IN	Composite Synchronized Pulse
51	-	VDD2	VDD2 (AL+5V)

Pin No.	IN/ OUT	Signal Name	Function
52	IN	AFCC	Low Pass Filter Input Signal For AFC
53	OUT	AFCLPF	Low Pass Filter Output Signal For AFC
54	OUT	VIDEO-MUTE	Video Mute Control Signal
55	OUT	OUTPUT-SELECT	Output Select (DVD="L"/ VCR="H")
56	OUT	DVD-AUDIO-MUTE	DVD Audio Mute Control Signal
57	OUT	VIDEO-SW3	Video Switching Signal 3
58	OUT	VIDEO-SW2	Video Switching Signal 2
59	OUT	VIDEO-SW1	Video Switching Signal 1
60	OUT	AUDIO-SW2	Audio Switching Signal 2
61	OUT	AUDIO-SW1	Audio Switching Signal 1
62	OUT	DTV/ ANALOG	DTV/ANALOG Select Signal
63	-	NU	Not Used
64	-	NU	Not Used
65	IN	D-PFG	Drum PG/FG Input Signal
66	-	NU	Not Used
67	IN	C-FG	Capstan Motor Rotation Detection Pulse
68	-	AFG	GND
69	OUT	VRO	Servo Standard Voltage Output
70	IN	VRI	Servo Standard Voltage Input
71	-	AVss	AVSS (GND)
72	IN	CTLA	CTL Amp. AC GND
73	IN	ADVV	Power Supply
74	IN/ OUT	CTL (+)	Playback/Record Control Signal (+)
75	IN/ OUT	CTL (-)	Playback/Record Control Signal (-)
76	OUT	CTL	Amp. Output Control Signal for Test Point
77	OUT	FAN-CONT	Fan Motor Control Signal
78	IN	Hi-Fi/ NOR-IN	Audio Mode Input HiFi="L"/ Normal="H"
79	IN	DVD POWER-SAFETY	DVD Power Supply Safety Signal
80	IN	VCR POWER-SAFETY	VCR Power Supply Safety Signal
81	IN	END-S	Tape End Position Detect Signal
82	IN	AFC	Automatic Frequency Control Signal
83	IN	V-ENV	Video Envelope Comparator Signal
84	IN	PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage
85	IN	KEY-2	A/D Key Data Signal 2
86	IN	KEY-1	A/D Key Data Signal 1
87	IN	LD-SW	Deck Mode Position Detector Signal
88	IN	ST-S	Tape Start Position Detector Signal
89	IN	DVD POWER-SAFETY2	DVD Power Supply Safety Signal
90	OUT	DTV1.05V-CONT	DTV1.05 Control Signal
91	OUT	BUS-CONT	BUS Control Signal
92	OUT	POWER-LED	Power LED Signal Output
93	OUT	POWER-LED	Power LED Signal Output
94	OUT	VCR-LED	VCR Mode LED Signal Output
95	OUT	VCR-LED	VCR Mode LED Signal Output
96	OUT	DVD-LED	DVD Mode LED Signal Output
97	OUT	DVD-LED	DVD Mode LED Signal Output
98	OUT	C-ROTA	Color Phase Rotary Changeover Signal
99	OUT	H-A-SW	Video Head Amp Switching Pulse
100	IN	H-A-COMP	Head Amp Comparator Signal

Notes:

Abbreviation for Active Level:

PWM ----- Pulse Wide Modulation

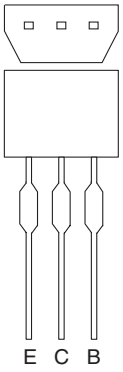
A/D -------- Analog - Digital Converter

< DVD Section >

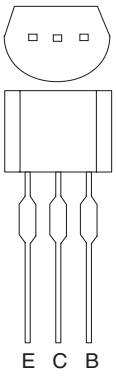
IC1571 (FIP DRIVER IC)

Pin No.	IN/ OUT	Signal Name	Function
1	IN	CLK	Clock Input
2	IN	STB	Serial Interface Strobe
3	-	NU	Not Used
4	-	NU	Not Used
5	-	VSS	GND
6	-	VDD	Power Supply
7	OUT	a	Segment Output
8		b	
9		c	
10		d	
11		e	
12		f	
13		g	
14		h	
15	-	VEE	Pull Down Level
16	OUT	i	Segment Output
17	OUT	7G	Grid Output
18		6G	
19		5G	
20		4G	
21		3G	
22		2G	
23		1G	
24	-	VDD	Power Supply
25	-	VSS	GND
26	IN	OSC	Oscillator Input
27	-	NU	Not Used
28	IN	DIN	Serial Data Input

LEAD IDENTIFICATIONS



KTC3199-(BL,GR,Y)-AT/P
KRA103M-AT/P
KRC103M-AT/P
KTA1267Y-AT/P
KTC3193-Y-AT/P
KTA1266-Y-AT/P



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KTC3203-Y-AT/P
2SC3266-GR(TPE2 F)

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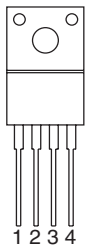

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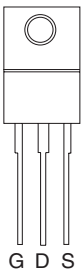

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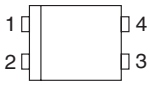
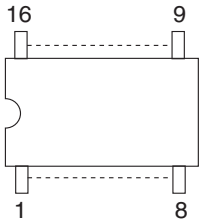


1: Anode
2: Cathode
3: Emitter
4: Collector

CD4052BNSR
CD4053BNSR



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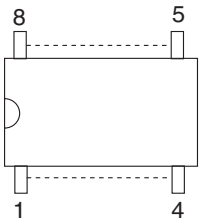

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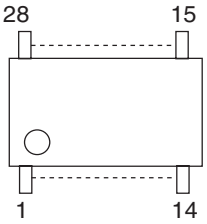

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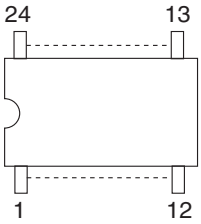

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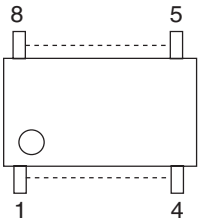

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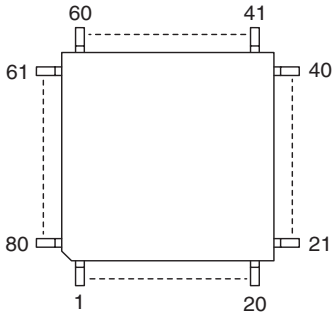

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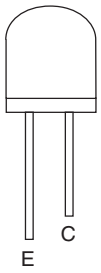

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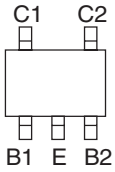

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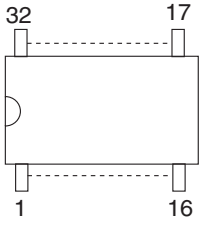

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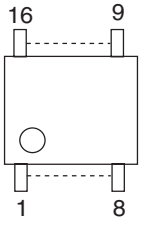

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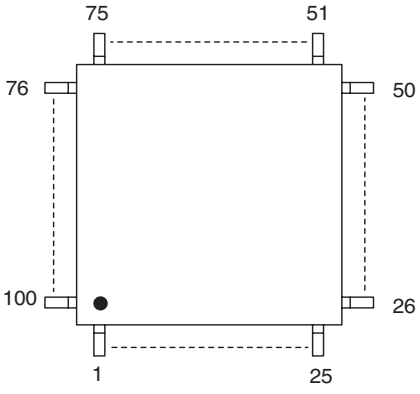

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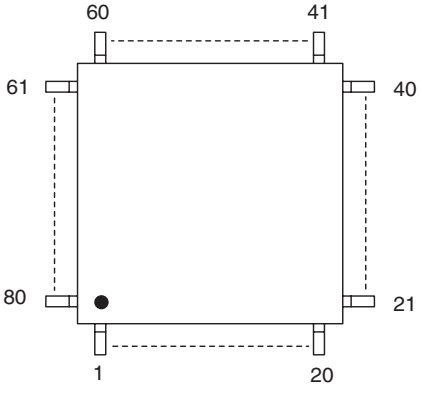

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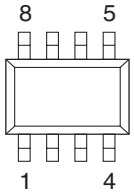
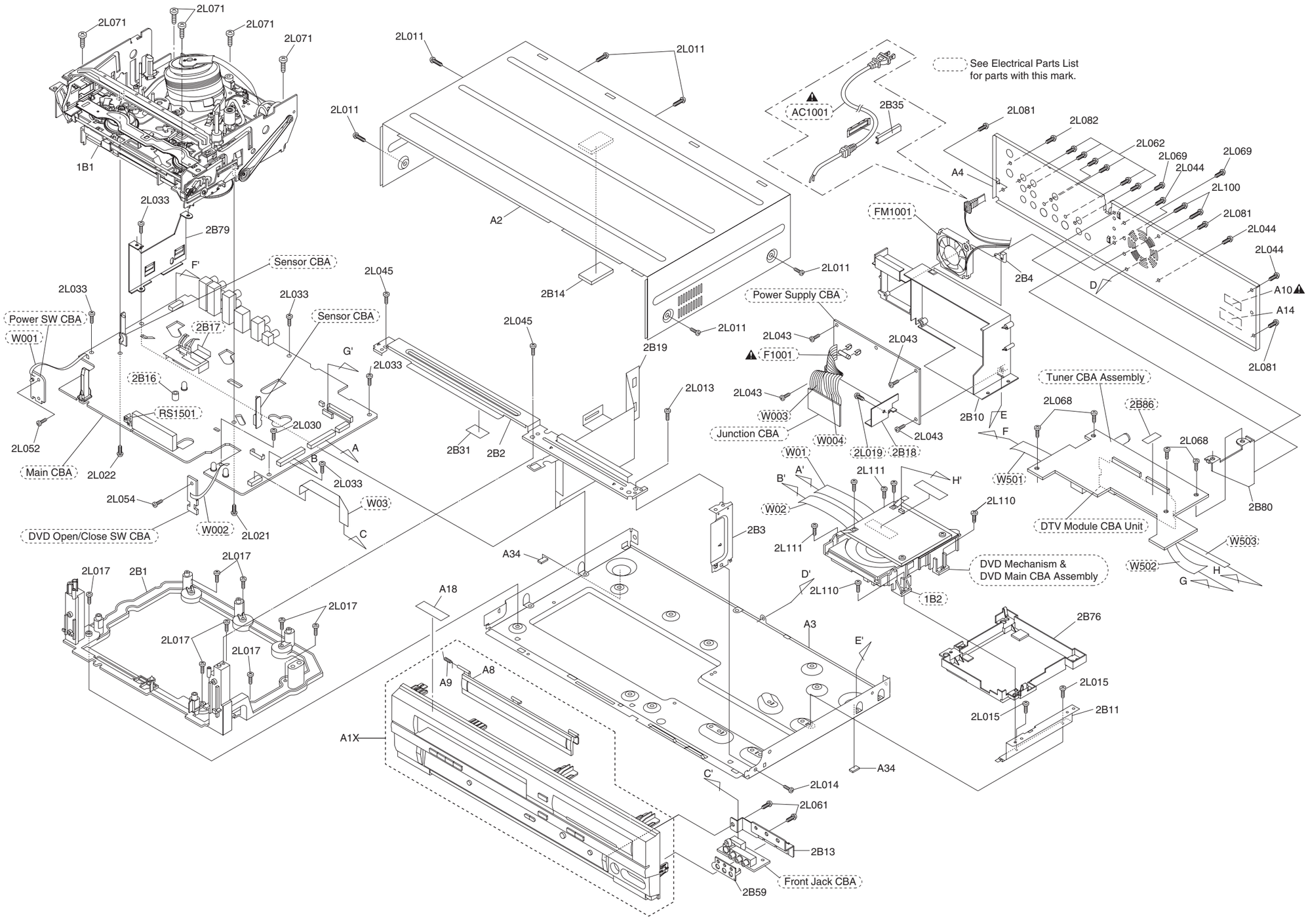


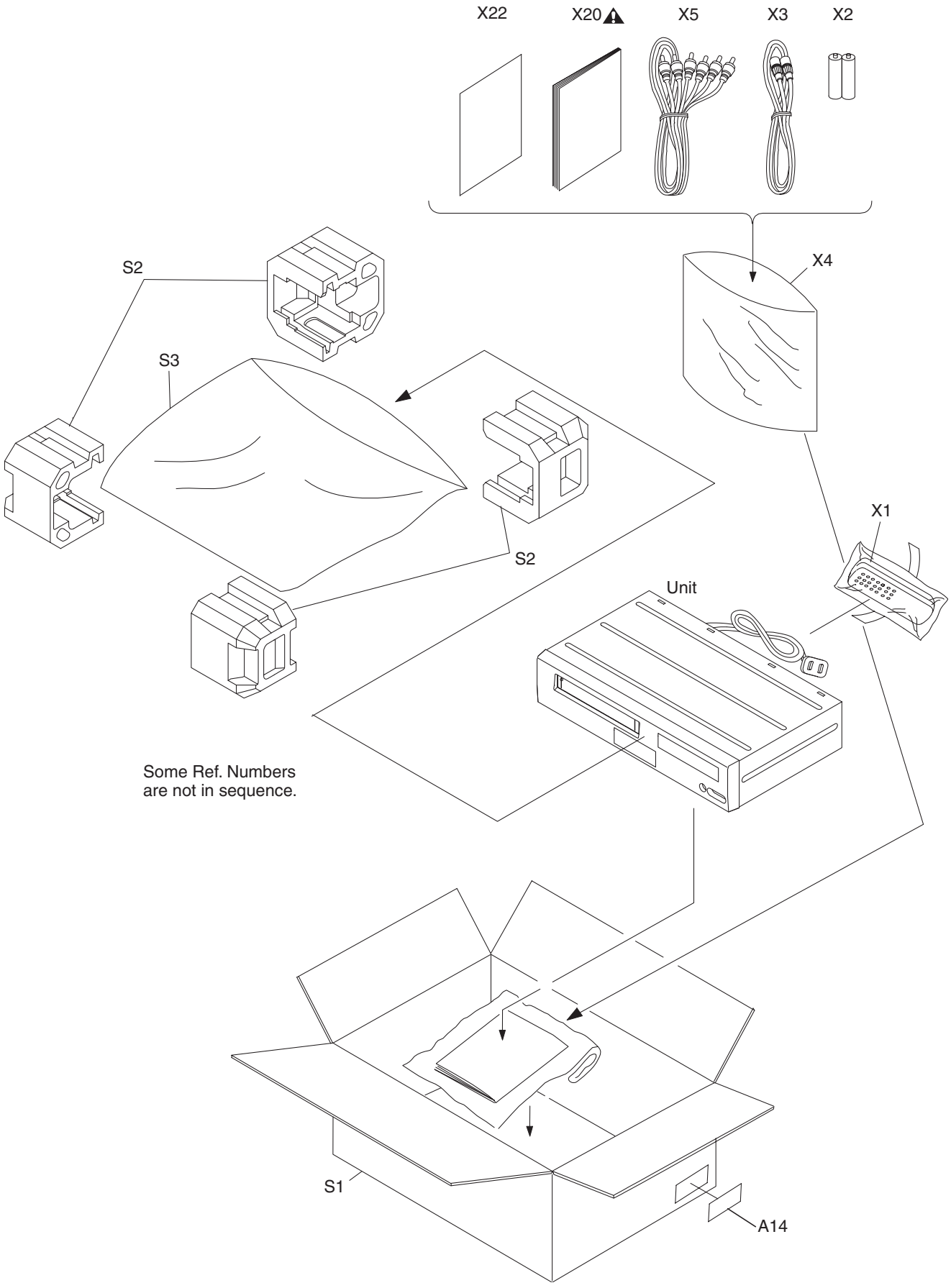
Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

EXPLODED VIEWS

Cabinet



Packing


X22
X20
X5
X3
X2
X4
S2
S3
S2
X1
Unit
Some Ref. Numbers
are not in sequence.
S1
A14

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE: Parts that are not assigned part numbers (---------) are not available.

Ref. No.	Description	Part No.
A1X	FRONT ASSEMBLY E9C80UD	1VM222821
A2	TOP COVER E9AB1CD	1VM323296
A3	MAIN CHASSIS E9400UD	0VM101353H
A4	REAR PANEL E9C10UD	1VM222725
A10⚠	RATING LABEL(U) E9C80UD	---------
A14	RFID LABEL(NO PRINTING) E9A80UD	---------
A18	TELEPHONE NO. LABEL H9670UD	---------
A34	FOOT H5100UD	0VM406940A
1B1	DECK ASSEMBLY CZD014/VM2460	N2460FL
2B1	DECK PEDESTAL E9600UD	1VM120055G
2B2	FRONT BRACKET E9400UD	0VM204534C
2B3	FRONT BRACKET R E9400UD	0VM416269A
2B4	EARTH PLATE E9600UD	1VM421163
2B10	HOLDER PCB E9400UD	0VM101354E
2B11	BRACKET R E9600UD	1VM421062C
2B13	JACK BRACKET E9400UD	0VM416273
2B14	CUSHION RUBBER E9400UD	0VM416664C
2B19	RADIATION SHEET E9610UD	1VM320666B
2B31	TAPE HIMELON H9206JD	0VM413956
2B35	HOLDER EAS(H9410UD) MAKER NO.EM150DR	0VM415877
2B59	JACK EARTH PLATE E9A80UD	1VM322618
2B76	DUST COVER(PS) E9B34ED	1VM222682
2B79	D/T BRACKET L E9C10UD	1VM323275
2B80	D/T BRACKET R E9C10UD	1VM424979
2L011	SCREW TAP TIGHT M3X5 BIND HEAD+BLK NI	GBHC3050
2L013	SCREW S-TIGHT M3X6 BIND HEAD+	GBJS3060
2L014	SCREW S-TIGHT M3X6 BIND HEAD+	GBJS3060
2L015	SCREW M3X5 HEAD+ BIND S-TIGHT	GBJS3050
2L017	SCREW S-TIGHT M3X8 BIND HEAD+	GBJS3080
2L021	SCREW P-TIGHT M3X8 BIND HEAD+	GBCP3080
2L022	SCREW S-TIGHT M3X6 BIND HEAD+	GBJS3060
2L030	SCREW P-TIGHT M3X8 BIND HEAD+	GBJP3080
2L033	SCREW S-TIGHT M3X6 BIND HEAD+	GBJS3060
2L043	SCREW P-TIGHT M3X8 BIND HEAD+	GBJP3080
2L044	SCREW P-TIGHT M3X8 BIND HEAD+	GBJP3080
2L045	SCREW P-TIGHT M3X8 BIND HEAD+	GBJP3080
2L052	SCREW P-TIGHT M3X6 BIND HEAD+	GBJP3060
2L054	SCREW P-TIGHT M3X6 BIND HEAD+	GBJP3060
2L061	SCREW P-TIGHT M3X6 BIND HEAD+	GBJP3060
2L062	SCREW B-TIGHT M3X8 BIND HEAD+	GBHB3080
2L068	SCREW S-TIGHT M3X6 BIND HEAD+	GBJS3060
2L069	S-TIGHT SCREW M3X6 BIND HEAD+BLACK	GBHS3060
2L071	SCREW P-TIGHT M3*10 WASHERHEAD+	GCJP3100
2L081	S-TIGHT SCREW M3X6 BIND HEAD+BLACK	GBHS3060
2L082	S-TIGHT SCREW M3X6 BIND HEAD+BLACK	GBHS3060
2L100	P-TIGHT SCREW M3X34 E9400UD	1VM420034A
2L110	SCREW S-TIGHT M3X10 BIND HEAD+	GBJS3100
2L111	SCREW P-TIGHT 3X14 BIND HEAD +	GBJP3140

Ref. No.	Description	Part No.
FM1001	MOTOR DC FAN 2D65BK100100	MMEZR12XNR01
	PACKING	
S1	GIFT BOX CARTON E9C80UD	1VM323581
S2	STYROFOAM E9400UD	0VM101363C
S3	SET BAG E7708UA	0DM400731D
	ACCESSORIES	
X1	REMOTE CONTROL UNIT NB555UD	NB555UD
X2	DRY BATTERY R03/2S	XB0M451T0006
X3	RF CABLE 2.5C-2V	WPZ0901TM002
X4	ACCESSORY BAG E5700UD	0VM415576
X5	AV CORD 1000/BLACK	WPZ0102TM018
X20⚠	OWNERS MANUAL E9C80UD	1VMN23373
X22	QUICK GUIDE E9C80UD	1VMN23374

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25% D.....±0.5% F.....±1%

G.....±2% J.....±5% K.....±10%

M.....±20% N.....±30% Z.....+80/-20%

DVD MECHANISM & DVD MAIN CBA ASSEMBLY

Ref. No.	Description	Part No.
1B2	DVD MECHANISM & DVD MAIN CBA ASSEMBLY	N78FMCUN

MCV CBA

Ref. No.	Description	Part No.
	MCV CBA Consists of the following:	1VSA15454
	MAIN CBA (MCV-A) POWER SW CBA (MCV-B) DVD OPEN/CLOSE SW CBA (MCV-C) FRONT JACK CBA (MCV-D) SENSOR CBA	---------- ---------- ---------- ---------- 1VSA15457

MAIN CBA

Ref. No.	Description	Part No.
	MAIN CBA (MCV-A) Consists of the following:	----------
	CAPACITORS	
C348	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1051	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C1052	ELECTROLYTIC CAP. 220µF/6.3V M	CE0KMASDL221
C1055	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C1056	ELECTROLYTIC CAP. 22µF/16V M	CE1CMASDL220
C1103	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C1214	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASDL101
C1215	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1301	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1302	CHIP CERAMIC CAP.(1608) CH J 390pF/50V	CHD1JJ3CH391
C1303	PCB JUMPER D0.6-P5.0	JW5.0T
C1304	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C1305	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C1307	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C1308	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C1309	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1310	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C1311	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1312	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C1313	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1314	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C1315	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C1316	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C1317	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C1318	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C1319	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1324	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1327	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C1328	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1329	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1330	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1331	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1332	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1333	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1336	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1339	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V	CHD1JK30B473
C1340	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1341	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V	CHD1JK30B473
C1342	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1343	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C1346	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1401	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1404	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1405	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C1406	ELECTROLYTIC CAP. 33µF/6.3V M H7	CE0KMAVSL330
C1407	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1408	CHIP CERAMIC CAP.(1608) B K 0.012µF/50V	CHD1JK30B123
C1409	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1410	CHIP CERAMIC CAP.(1608) B K 2700pF/50V	CHD1JK30B272
C1411	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1412	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C1413	CHIP CERAMIC CAP.(1608) B K 6800pF/50V	CHD1JK30B682
C1422	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C1423	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C1424	CERAMIC CAP. B K 470pF/500V	CCD2JKS0B471
C1425	POLYESTER FILM CAP. (PB FREE) 0.018µF/ 100V J	CA2A183DT018
C1440	ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMAVSLR10
C1441	ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMAVSLR10
C1448	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C1449	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C1451	ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMAVSL470
C1452	ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMAVSLR10
C1453	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1454	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1455	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C1456	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1457	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C1458	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1459	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C1460	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C1461	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1462	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1463	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1465	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C1466	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C1467	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V	CHD1JK30B223
C1470	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104

Ref. No.	Description	Part No.
C1471	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C1472	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C1473	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1474	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C1475	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1476	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1483	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1485	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C1502	ELECTROLYTIC CAP. 220µF/6.3V M	CE0KMASDL221
C1505	ELECTROLYTIC CAP. 22µF/10V M H7	CE1AMAVSL220
C1507	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1508	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V	CHD1JK30B223
C1509	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C1513	CHIP CERAMIC CAP.(1608) CH D 10pF/50V	CHD1JD3CH100
C1514	CHIP CERAMIC CAP. CH J 27pF/50V	CHD1JJ3CH270
C1515	CHIP CERAMIC CAP.(1608) CH J 22pF/50V	CHD1JJ3CH220
C1521	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASDL470
C1522	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C1523	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C1525	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C1527	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V	CHD1JK30B473
C1529	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V	CHD1JK30B223
C1530	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1531	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1532	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1533	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C1534	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1535	ELECTROLYTIC CAP. 22µF/10V M H7	CE1AMAVSL220
C1536	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1537	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1540	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1544	ELECTROLYTIC CAP. 220µF/6.3V M	CE0KMASDL221
C1545	ELECTROLYTIC CAP. 100µF/16V M H7	CE1CMAVSL101
C1547	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1585	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1586	ELECTROLYTIC CAP. 100µF/6.3V M H7	CE0KMASSL101
C1587	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C1588	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C1589	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1706	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1933	ELECTROLYTIC CAP. 22µF/50V M H7	CE1JMASSL220
C2222	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C2223	ELECTROLYTIC CAP. 100µF/6.3V M H7	CE0KMASSL101
C2224	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2227	ELECTROLYTIC CAP. 100µF/6.3V M H7	CE0KMASSL101
C2228	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2324	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2325	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C2326	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2327	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2328	ELECTROLYTIC CAP. 100µF/6.3V M NP	CP0KMASNC101
C2329	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C2330	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2331	PCB JUMPER D0.6-P5.0	JW5.0T
C2355	ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASSL470
C2363	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2391	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C2392	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASDL471
C2401	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C2403	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C2421	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C2423	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C2441	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL1R0
C2442	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASDL471
C2443	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASDL471
C2461	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL1R0
C2462	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASDL471
C2481	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL1R0
C2482	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASDL471
C2523	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2524	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASDL101
C2531	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C2532	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMASSL220
C2535	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C2536	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMASSL220
C2537	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2762	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C2766	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C2777	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C2778	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C2779	ELECTROLYTIC CAP. 10µF/16V M	CE1CMASDL100
C2780	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASDL101
C2807	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C2808	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C2814	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASDL2R2
C2818	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C2819	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C2820	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASDL2R2
C2821	ELECTROLYTIC CAP. 22µF/16V M	CE1CMASDL220
C2822	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C2823	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASDL2R2
C2825	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASDL2R2
C2826	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASDL2R2
C2827	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2828	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASDL101
C2829	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2831	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C2832	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C2833	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASDL101
C2837	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C2838	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C2839	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C2840	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2841	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C2842	ELECTROLYTIC CAP. 330µF/10V M	CE1AMASDL331
C2844	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C2845	CHIP CERAMIC CAP.(1608) CH J 270pF/50V	CHD1JJ3CH271
C2846	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASDL471
C2847	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C2848	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2850	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C2851	CHIP CERAMIC CAP.(1608) CH J 270pF/50V	CHD1JJ3CH271
C2852	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C2853	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C2854	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C2863	ELECTROLYTIC CAP. 10µF/16V M	CE1CMASDL100
C2864	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C2922	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASDL4R7
C5042	CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZ30F103
C5047	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASDL101
C5060	CARBON RES. 1/6W J 68k Ω	RCX6JATZ0683
C5063	CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
C5064	CARBON RES. 1/6W J 68k Ω	RCX6JATZ0683
C5065	CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
CONNECTORS		

Ref. No.	Description	Part No.
CN1101	242 SERIES CONNECTOR 224202118W1	J322C18TG001
CN1102	PH CONNECTOR TOP 2P B2B-PH-K-S (LF)(SN)	J3PHC02JG029
CN2609	FE CONNECTOR TOP 8P 08FE-BT-VK-N	JCFEJ08JG001
CN2610	FFC CONNECTOR IMSA-9615S-20A-PP-A	JC96J20ER007
CN2611	FFC CONNECTOR IMSA-9615S-18A-PP-A	JC96J18ER007
DIODES		
D1052	ZENER DIODE MTZJT-7710B	QDTB00MTZJ10
D1082	PCB JUMPER D0.6-P10.0	JW10.0T
D1083	ZENER DIODE MTZJT-7718B	QDTB00MTZJ18
D1085	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1100	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1101	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1106	ZENER DIODE MTZJT-774.3C	QDTC0MTZJ4R3
D1108	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1109	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1501	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1555	LED MIE-534A2	NPZZM1E534A2
D1562	LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D1563	LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D1701	ZENER DIODE MTZJT-7733B	QDTB00MTZJ33
D2221	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D2223	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D2603	PCB JUMPER D0.6-P8.0	JW8.0T
D2604	RECTIFIER DIODE 1N4005	NDQZ001N4005
D2801	ZENER DIODE MTZJT-775.1B	QDTB0MTZJ5R1
D2802	ZENER DIODE MTZJT-775.1B	QDTB0MTZJ5R1
D2803	ZENER DIODE MTZJT-775.1B	QDTB0MTZJ5R1
D2804	ZENER DIODE MTZJT-775.1B	QDTB0MTZJ5R1
D2805	ZENER DIODE MTZJT-775.1B	QDTB0MTZJ5R1
D2806	ZENER DIODE MTZJT-775.1B	QDTB0MTZJ5R1
D2807	ZENER DIODE MTZJT-775.1B	QDTB0MTZJ5R1
D2808	ZENER DIODE MTZJT-775.1B	QDTB0MTZJ5R1
D3005	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
ICS		
IC1301	IC Y/C/A LA71205M-MPB-E	QSZBA0RSY037
IC1451	IC HIFI LA72670BM-MPB-E	QSZBA0RSY039
IC1501	IC SYSCON MN101D10FYK	QSZAA0RMS073
IC1571	VFD DRIVER/CONTROLLER IC PT6313-S-TP(L)	NSZBA0TG2007
IC2404	DRIVER FOR DVD MM1636XWRE	QSZBA0TMM108
IC2405	DRIVER FOR DVD MM1637XVBE	QSZBA0TMM102
IC2406	IC ANALOG MULTIPLEXER CD4053BNSR	NSZBA0TTY093
IC2503	VOLTAGE REGULATOR PQ070XF01SZH	QSZBA0SSH054
IC2504	VOLTAGE REGULATOR PQ070XF01SZH	QSZBA0SSH054
IC2801	IC SWITCHING CD4052BNSR	NSZBA0TTY091
IC2803	IC OP AMP UTC4580E	NSZBA0T2H010
IC2804	IC OP AMP KIA4558P/P	NSZBA0SJY035
IC2805	VIDEO SWITCH MM1697AJBE	QSZBA0TMM150
IC5002	IC ANALOG MULTIPLEXER CD4053BNSR	NSZBA0TTY093
IC5005	VOLTAGE REGULATOR PQ070XF01SZH	QSZBA0SSH054
COILS		
L305	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L306	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L1251	PCB JUMPER D0.6-P5.0	JW5.0T
L1303	INDUCTOR(100μH K) LAP02TA101K	LLAXKATTU101
L1304	RADIAL TYPE CHOKE COIL CW68-470K-841040NP	LLBD00PKV023
L1421	INDUCTOR 47μH-K-5FT	LLARKBSTU470
L1422	INDUCTOR 22μH-K-26T	LLAXKATTU220
L1423	PCB JUMPER D0.6-P5.0	JW5.0T
L1451	PCB JUMPER D0.6-P5.0	JW5.0T
L1501	INDUCTOR(100μH K) LAP02TA101K	LLAXKATTU101

Ref. No.	Description	Part No.
L1502	RADIAL TYPE CHOKE COIL CW68-470K-841040NP	LLBD00PKV023
L1503	INDUCTOR 12μH-K-26T	LLAXKATTU120
L1505	INDUCTOR(100μH K) LAP02TA101K	LLAXKATTU101
L2200	INDUCTOR(100μH K) LAP02TA101K	LLAXKATTU101
L2351	INDUCTOR(0.47μH K) LAP02TAR47K	LLAXKATTUR47
L2441	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L2461	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L2481	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L2522	RADIAL TYPE CHOKE COIL CW68-470K-841040NP	LLBD00PKV023
L2771	PCB JUMPER D0.6-P5.0	JW5.0T
L2800	PCB JUMPER D0.6-P5.0	JW5.0T
L2801	PCB JUMPER D0.6-P5.0	JW5.0T
L5004	PCB JUMPER D0.6-P5.0	JW5.0T
TRANSISTORS		
Q1052	NPN TRANSISTOR KRC103M-AT/P	NQSZKRC103MP
Q1055	TRANSISTOR KTC3198-Y-AT/P	NQSYKTC3198P
Q1056	TRANSISTOR KTC3203-Y-AT/P	NQSYKTC3203P
Q1057	TRANSISTOR KTC3198-Y-AT/P	NQSYKTC3198P
Q1101	TRANSISTOR KTC3266-GR-AT/P	NQS4KTC3266P
Q1102	TRANSISTOR KTA1266-Y-AT/P	NQSYKTA1266P
Q1103	TRANSISTOR KTC3199-Y-AT/P	NQSYKTC3199P
Q1104	TRANSISTOR KTA1267-Y-AT/P	NQSYKTA1267P
Q1105	TRANSISTOR KTC3199-Y-AT/P	NQSYKTC3199P
Q1107	TRANSISTOR KTA1267-Y-AT/P	NQSYKTA1267P
Q1108	NPN TRANSISTOR KRC103M-AT/P	NQSZKRC103MP
Q1301	TRANSISTOR KTA1266-Y-AT/P	NQSYKTA1266P
Q1302	TRANSISTOR KTC3193-Y-AT/P	NQSYKTC3193P
Q1303	TRANSISTOR KTC3193-Y-AT/P	NQSYKTC3193P
Q1421	TRANSISTOR KTA1266-Y-AT/P	NQSYKTA1266P
Q1422	TRANSISTOR KTC3203-Y-AT/P	NQSYKTC3203P
Q1425	RES. BUILT-IN TRANSISTOR KRA103M-AT/P	NQSZ0KRA103M
Q1426	CHIP TRANSISTOR RN1511(TE85R.F)	QQ2Z0RN1511F
Q1501	TRANSISTOR KTC3199-BL-AT/P	NQS5KTC3199P
Q1506	PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q1509	NPN TRANSISTOR KRC103M-AT/P	NQSZKRC103MP
Q1510	TRANSISTOR KTC3199-Y-AT/P	NQSYKTC3199P
Q2205	NPN TRANSISTOR KRC103M-AT/P	NQSZKRC103MP
Q2304	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q2305	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q2351	TRANSISTOR KTC3199-Y-AT/P	NQSYKTC3199P
Q2391	TRANSISTOR KTA1266-Y-AT/P	NQSYKTA1266P
Q2804	TRANSISTOR KTA1267-Y-AT/P	NQSYKTA1267P
Q2805	TRANSISTOR KTC3199-Y-AT/P	NQSYKTC3199P
Q2806	TRANSISTOR KTC3199-Y-AT/P	NQSYKTC3199P
Q5001	NPN TRANSISTOR KRC103M-AT/P	NQSZKRC103MP
RESISTORS		
R1056	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1057	CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R1064	CARBON RES. 1/6W G 1.5k Ω	RCX6GATZ0152
R1065	CARBON RES. 1/6W G 820 Ω	RCX6GATZ0821
R1073	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1075	CARBON RES. 1/6W J 4.7k Ω	RCX6JATZ0472
R1092	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R1095	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R1097	CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R1103	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R1104	CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R1106	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R1108	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1109	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1112	CARBON RES. 1/4W J 8.2 Ω	RCX4JATZ08R2

Ref. No.	Description	Part No.
R1113	CARBON RES. 1/4W J 8.2 Ω	RCX4JATZ08R2
R1115	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R1116	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1117	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1118	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1125	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1126	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1127	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R1132	CARBON RES. RD1/2S101JTA	RCX2JATZ0101
R1133	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R1301	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1302	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R1304	CHIP RES. 1/10W J 1.2k Ω	RRXAJR5Z0122
R1306	CHIP RES. 1/10W J 3.9M Ω	RRXAJR5Z0395
R1307	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R1308	CHIP RES. 1/10W J 82k Ω	RRXAJR5Z0823
R1309	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1310	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1311	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R1312	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R1313	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R1314	CHIP RES. 1/10W J 680k Ω	RRXAJR5Z0684
R1316	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1317	CHIP RES. 1/10W J 8.2k Ω	RRXAJR5Z0822
R1321	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1322	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R1323	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1324	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R1327	CHIP RES.(1608) 1/10W F 1.1k Ω	RRXAFR5H0112
R1401	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R1402	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R1409	CHIP RES. 1/10W J 8.2k Ω	RRXAJR5Z0822
R1410	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R1411	CHIP RES. 1/10W J 330k Ω	RRXAJR5Z0334
R1412	CHIP RES. 1/10W J 150 Ω	RRXAJR5Z0151
R1413	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R1414	CHIP RES. 1/10W J 910 Ω	RRXAJR5Z0911
R1415	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1421	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1422	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R1424	CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R1425	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R1426	CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R1451	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R1452	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1453	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R1454	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R1455	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1456	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R1457	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R1458	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R1459	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R1463	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R1464	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R1465	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1466	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R1468	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R1469	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1470	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R1471	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1484	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1485	CHIP RES. 1/10W J 15k Ω	RRXAJR5Z0153
R1486	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473

Ref. No.	Description	Part No.
R1487	CHIP RES. 1/10W J 15k Ω	RRXAJR5Z0153
R1502	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1503	CHIP RES. 1/10W J 820 Ω	RRXAJR5Z0821
R1504	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R1506	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R1508	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1511	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R1517	CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R1518	CHIP RES. 1/10W J 220k Ω	RRXAJR5Z0224
R1521	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1523	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1524	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1525	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1526	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1527	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1528	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1529	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1531	CHIP RES.(1608) 1/10W F 4.7k Ω	RRXAFR5H0472
R1532	CHIP RES.(1608) 1/10W F 1.5k Ω	RRXAFR5H0152
R1533	CHIP RES.(1608) 1/10W F 22k Ω	RRXAFR5H0223
R1534	CHIP RES. 1/10W F 470 Ω	RRXAFR5H0471
R1535	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R1536	CHIP RES.(1608) 1/10W F 3.6k Ω	RRXAFR5H0362
R1537	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R1540	CHIP RES. 1/10W J 390k Ω	RRXAJR5Z0394
R1541	CHIP RES. 1/10W J 390k Ω	RRXAJR5Z0394
R1542	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R1543	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1544	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R1545	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1546	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1547	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R1548	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1551	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R1556	CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R1559	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1562	CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R1564	CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R1566	CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R1585	CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R1590	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1591	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1592	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1595	CHIP RES. 1/10W J 82k Ω	RRXAJR5Z0823
R1601	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R1602	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1603	CHIP RES. 1/10W J 1.2k Ω	RRXAJR5Z0122
R1604	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R1605	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1606	CHIP RES. 1/10W J 3.9k Ω	RRXAJR5Z0392
R1607	CHIP RES. 1/10W J 8.2k Ω	RRXAJR5Z0822
R1608	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R1611	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R1612	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1613	CHIP RES. 1/10W J 1.2k Ω	RRXAJR5Z0122
R1614	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R1615	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1616	CHIP RES. 1/10W J 3.9k Ω	RRXAJR5Z0392
R1617	CHIP RES. 1/10W J 8.2k Ω	RRXAJR5Z0822
R1618	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R1641	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R1642	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R1645	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222

Ref. No.	Description	Part No.
R1646	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R1647	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1648	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R1650	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1651	CHIP RES. 1/10W J 560 Ω	RRXAJR5Z0561
R1702	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R2221	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R2222	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R2223	CHIP RES.(1608) 1/10W F 1.5k Ω	RRXAFR5H0152
R2224	CHIP RES. 1/10W F 15k Ω	RRXAFR5H0153
R2225	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R2228	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R2229	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R2230	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R2231	CHIP RES.(1608) 1/10W F 120 Ω	RRXAFR5H0121
R2232	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R2234	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R2327	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R2328	CHIP RES. 1/10W J 3k Ω	RRXAJR5Z0302
R2329	CHIP RES. 1/10W J 3k Ω	RRXAJR5Z0302
R2330	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R2331	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R2332	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R2333	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R2351	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R2352	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R2353	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R2354	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R2355	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2356	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R2358	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R2391	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R2392	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R2395	PCB JUMPER D0.6-P5.0	JW5.0T
R2397	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R2402	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2403	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2404	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2407	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2409	CHIP RES.(1608) 1/10W F 220 Ω	RRXAFR5H0221
R2410	CHIP RES.(1608) 1/10W F 3.3k Ω	RRXAFR5H0332
R2421	CHIP RES.(1608) 1/10W F 240 Ω	RRXAFR5H0241
R2422	CHIP RES.(1608) 1/10W F 4.7k Ω	RRXAFR5H0472
R2441	CHIP RES.(1608) 1/10W F 200 Ω	RRXAFR5H0201
R2443	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2461	CHIP RES.(1608) 1/10W F 220 Ω	RRXAFR5H0221
R2462	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2481	CHIP RES.(1608) 1/10W F 220 Ω	RRXAFR5H0221
R2482	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2521	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R2615	CARBON RES. 1/6W J 1.2k Ω	RCX6JATZ0122
R2616	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R2617	CHIP RES. 1/10W J 360 Ω	RRXAJR5Z0361
R2751	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2777	CARBON RES. 1/6W J 39k Ω	RCX6JATZ0393
R2778	CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R2779	CHIP RES. 1/10W J 13k Ω	RRXAJR5Z0133
R2780	CHIP RES. 1/10W J 11k Ω	RRXAJR5Z0113
R2783	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R2784	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R2802	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R2803	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R2806	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184

Ref. No.	Description	Part No.
R2809	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R2810	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2825	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R2827	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R2829	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R2831	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R2833	CHIP RES.(1608) 1/10W F 75k Ω	RRXAFR5H0753
R2835	CHIP RES.(1608) 1/10W F 75k Ω	RRXAFR5H0753
R2837	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R2840	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R2841	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R2842	CHIP RES. 1/10W J 620 Ω	RRXAJR5Z0621
R2843	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R2844	CHIP RES. 1/10W J 20k Ω	RRXAJR5Z0203
R2845	CHIP RES. 1/10W J 13k Ω	RRXAJR5Z0133
R2847	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R2852	CHIP RES.(1608) 1/10W F 8.2k Ω	RRXAFR5H0822
R2853	CHIP RES. 1/10W J 13k Ω	RRXAJR5Z0133
R2854	CHIP RES.(1608) 1/10W F 13k Ω	RRXAFR5H0133
R2855	CHIP RES.(1608) 1/10W F 8.2k Ω	RRXAFR5H0822
R2856	CHIP RES. 1/10W J 13k Ω	RRXAJR5Z0133
R2857	CHIP RES.(1608) 1/10W F 13k Ω	RRXAFR5H0133
R2858	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R2859	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R2860	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R2861	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R2862	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R2863	CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R2867	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R2868	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R2871	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R2872	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R2875	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R2876	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R5020	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R5022	CHIP RES.(1608) 1/10W F 4.3k Ω	RRXAFR5H0432
R5023	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R5024	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R5025	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R5027	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R5028	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R5029	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R5046	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R5049	PCB JUMPER D0.6-P5.0	JW5.0T
R5050	PCB JUMPER D0.6-P5.0	JW5.0T
R5051	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R5052	CHIP RES. 1/10W J 27k Ω	RRXAJR5Z0273
R5053	CHIP RES. 1/10W J 27k Ω	RRXAJR5Z0273
R5054	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
SWITCHES		
SW1511	LEAF SWITCH MXS01830MVP0	SSC0101MCE03
SW1512	SWITCH ROTARY SSS-53MD-1	SSR0106KB004
SW1602	TACT SWITCH SKQSAF001A	SST0101AL041
SW1603	TACT SWITCH SKQSAF001A	SST0101AL041
SW1604	TACT SWITCH SKQSAF001A	SST0101AL041
SW1605	TACT SWITCH SKQSAF001A	SST0101AL041
SW1606	TACT SWITCH SKQSAF001A	SST0101AL041
SW1607	TACT SWITCH SKQSAF001A	SST0101AL041
SW1608	TACT SWITCH SKQSAF001A	SST0101AL041
SW1609	TACT SWITCH SKQSAF001A	SST0101AL041
SW1611	TACT SWITCH SKQSAF001A	SST0101AL041
SW1613	TACT SWITCH SKQSAF001A	SST0101AL041

Ref. No.	Description	Part No.
SW1616	TACT SWITCH SKQSAF001A	SST0101AL041
MISCELLANEOUS		
2B16	BUSH LED(F) H3700UD	0VM409508
2B17	SHIELD ASSEMBLY H9200UD	0VM413279A
FL1501	VACUUM FLUORESCENT DISPLAY 7-BT-301NS	TVFD1C0FT049
JC265	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC266	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC1301	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC1307	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC1401	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC1403	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC2701	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JK2202	RCA JACK MSP-281V41-B(B110)	JXRL010LY140
JK2401	S TYPE JACK MDC-050V-2.4 LF(B110	JXEL040LY003
JK2402	S TYPE JACK MDC-050V-2.4 LF(B110	JXEL040LY003
JK2403	RCA JACK MSP-213V1-652-B NI L	JXRL030LY116
JK2751	RCA JACK MSP-213V1-324-B NI L	JXRL030LY104
JK2804	RCA JACK MSP-213V3-324-B NI L	JYRL030LY025
JK2805	RCA JACK MSP-382V-12 NILF	JXRL020LY120
RS1501	SENSOR REMOTE RECEIVER KSM-602LU2S	USESJRSKK048
TP301	PCB JUMPER D0.6-P7.5	JW7.5T
TP302	PCB JUMPER D0.6-P15.0	JW15.0T
TP452	PCB JUMPER D0.6-P30.0	JW30.0T
TP502	PCB JUMPER D0.6-P7.5	JW7.5T
TP505	PCB JUMPER D0.6-P10.0	JW10.0T
TP506	PCB JUMPER D0.6-P5.0	JW5.0T
TP507	PCB JUMPER D0.6-P13.5	JW13.5T
TP513	PCB JUMPER D0.6-P5.0	JW5.0T
TP751	PCB JUMPER D0.6-P10.0	JW10.0T
TP753	PCB JUMPER D0.6-P15.0	JW15.0T
TP754	PCB JUMPER D0.6-P30.0	JW30.0T
W01	WIRE ASSEMBLY FFC 30PIN 30PIN/P1.00/140	WX1E9A00-001
W02	WIRE ASSEMBLY FFC 30PIN 30PIN/P1.00/140	WX1E9A00-001
VR1501	CARBON P.O.T. VZ067TL1 B104 PB(F)	VRCB104HH014
X1301	XTAL 3.579545MHz(20PPM)	FXC355LLN004
X1502	RESONATOR XTAL 32.768kHz QTF38-32.768K125P15L	FXC323LQUA03

POWER SW CBA

Ref. No.	Description	Part No.
	POWER SW CBA (MCV-B) Consists of the following:	----------
DIODE		
D1561	LED(RED) 204HD/E	NPQZ00204HDE
SWITCH		
SW1601	TACT SWITCH SKQSAF001A	SST0101AL041
MISCELLANEOUS		
W001	WIRE ASSEMBLY 4P 4PIN/AWG26#2651/P2.0	WX1E9A00-002

DVD OPEN/CLOSE SW CBA

Ref. No.	Description	Part No.
	DVD OPEN/CLOSE SW CBA (MCV-C) Consists of the following:	----------
SWITCHES		
SW1615	TACT SWITCH SKQSAF001A	SST0101AL041
SW1617	TACT SWITCH SKQSAF001A	SST0101AL041
MISCELLANEOUS		
W002	WIRE ASSEMBLY 3PIN 3PIN/AWG26#2651/P2.0	WX1E9A00-003

FRONT JACK CBA

Ref. No.	Description	Part No.
	FRONT JACK CBA (MCV-D) Consists of the following:	----------
CAPACITORS		
C2800	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C2801	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
CONNECTOR		
CN2605	FE CONNECTOR TOP 8P 08FE-BT-VK-N	JCFEJ08JG001
RESISTORS		
R2800	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R2801	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R2804	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2812	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R2815	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
MISCELLANEOUS		
JC1502	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JC1503	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JK2800	RCA JACK(RED) MTJ-032-11A-31 FE01	JYRL010LY024
JK2801	RCA JACK(WHITE) MTJ-032-11B-41 FE01	JXRL010LY102
JK2803	RCA JACK(YELLOW) MTJ-032-11B-40 FE01	JXRL010LY101
JK2806	S TYPE JACK MDC-050V-2.4 LF(B110	JXEL040LY003
W03	WIRE ASSEMBLY FFC 8PIN FFC_8PIN/105MM/P1.25	WX1E9A00-006

SENSOR CBA

Ref. No.	Description	Part No.
	SENSOR CBA Consists of the following:	1VSA15457
TRANSISTORS		
Q1503	PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q1504	PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12

TUNER CBA ASSEMBLY

Ref. No.	Description	Part No.
	TUNER CBA ASSEMBLY Consists of the following: DTV MODULE CBA UNIT TUNER CBA	1VSA15447 1VSA15462 ----------
TUNER CBA		
	TUNER CBA Consists of the following:	----------
CAPACITORS		
C5001	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASDL4R7
C5002	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASDL2R2
C5003	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASDL2R2
C5004	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASDL2R2
C5005	ELECTROLYTIC CAP. 10µF/16V M	CE1CMASDL100
C5006	ELECTROLYTIC CAP. 3.3µF/50V M	CE1JMASDL3R3
C5007	ELECTROLYTIC CAP. 3.3µF/50V M	CE1JMASDL3R3
C5008	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C5009	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V	CHD1JK30B223
C5010	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASDL2R2
C5011	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C5013	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C5014	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C5015	ELECTROLYTIC CAP. 0.33µF/50V M	CE1JMASDLR33
C5016	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C5017	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C5018	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C5019	CHIP CERAMIC CAP.(1608) B K 0.033µF/50V	CHD1JK30B333
C5020	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104

Ref. No.	Description	Part No.
C5022	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASDL101
C5023	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C5024	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C5032	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C5033	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C5039	CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZ30F103
C5043	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C5051	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C5052	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASDL102
C5053	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASDL101
C5057	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C5058	ELECTROLYTIC CAP. 10µF/16V M	CE1CMASDL100
C5059	ELECTROLYTIC CAP. 10µF/16V M	CE1CMASDL100
C5067	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
	CONNECTOR	
CN5007	FMN CONNECTOR SIDE 20P 20FMN-STRK-A(LF)(SN)	JCFNG20JG022
	DIODE	
D5003	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
	ICS	
IC5001	IC MTS DECORDER AN5832SA-E1V	QSZBA0TMS003
IC5003	EEP-ROM 128K M24128-BWMN6TP	NSZBA0TSS268
	COILS	
L5001	PCB JUMPER D0.6-P5.0	JW5.0T
L5007	CHOKE COIL 22µH-K	LLBD00PKV021
L5008	PCB JUMPER D0.6-P5.0	JW5.0T
L5009	PCB JUMPER D0.6-P5.0	JW5.0T
	TRANSISTORS	
Q5002	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q5003	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
	RESISTORS	
R5001	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R5002	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R5007	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R5008	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R5009	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R5012	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R5013	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R5030	CHIP RES. 1/10W J 56k Ω	RRXAJR5Z0563
R5031	CHIP RES. 1/10W J 56k Ω	RRXAJR5Z0563
R5032	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R5033	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R5034	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R5035	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R5038	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R5044	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R5055	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R5056	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R5057	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R5058	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R5059	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R6015	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R6016	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
	MISCELLANEOUS	
2B86	HIMELON TAPE(30*5) E7C40UD	1VM425436
BC5001	BEAD INDUCTOR FBR07HA121TB-00	LLBF00ZTU021
JC5002	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JC5004	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JC5005	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JP5001	PCB JUMPER D0.6-P5.0	JW5.0T
JP5002	PCB JUMPER D0.6-P12.5	JW12.5T
JP5003	PCB JUMPER D0.6-P5.0	JW5.0T
JP5008	PCB JUMPER D0.6-P7.5	JW7.5T
JP5009	PCB JUMPER D0.6-P7.5	JW7.5T
JP5010	PCB JUMPER D0.6-P15.0	JW15.0T
JP5011	PCB JUMPER D0.6-P15.0	JW15.0T
JP5013	PCB JUMPER D0.6-P10.0	JW10.0T
JP5014	PCB JUMPER D0.6-P7.5	JW7.5T
JP5015	PCB JUMPER D0.6-P17.5	JW17.5T
JP5016	PCB JUMPER D0.6-P17.5	JW17.5T
JP5017	PCB JUMPER D0.6-P6.0	JW6.0T
JP5018	PCB JUMPER D0.6-P6.0	JW6.0T
JP5019	PCB JUMPER D0.6-P6.5	JW6.5T
JP5020	PCB JUMPER D0.6-P5.0	JW5.0T
JP5022	PCB JUMPER D0.6-P12.5	JW12.5T
JP5023	PCB JUMPER D0.6-P15.0	JW15.0T
JP5025	PCB JUMPER D0.6-P20.0	JW20.0T
JP5026	PCB JUMPER D0.6-P17.5	JW17.5T
JP5027	PCB JUMPER D0.6-P11.5	JW11.5T
JP5028	PCB JUMPER D0.6-P7.5	JW7.5T
JP5029	PCB JUMPER D0.6-P17.5	JW17.5T
JP5030	PCB JUMPER D0.6-P5.0	JW5.0T
JP5031	PCB JUMPER D0.6-P9.0	JW9.0T
JP5033	PCB JUMPER D0.6-P5.0	JW5.0T
JP5034	PCB JUMPER D0.6-P6.5	JW6.5T
JP5037	PCB JUMPER D0.6-P12.5	JW12.5T
TU5001	TUNER 115U1003AF	UTUNNTUSP033
W501	WIRE ASSEMBLY 20PIN FFC 20P/95MM	WX1E9C00-001
W502	WIRE ASSEMBLY 18PIN FFC 18P/190MM	WX1E9C00-002
W503	WIRE ASSEMBLY 6PIN FFC 6P/235MM	WX1E9C00-003

PSV CBA

Ref. No.	Description	Part No.
	PSV CBA Consists of the following	1VSA15437
	POWER SUPPLY CBA (PSV-A) JUNCTION CBA (PSV-B)	--------- ---------

POWER SUPPLY CBA

Ref. No.	Description	Part No.
	POWER SUPPLY CBA (PSV-A) Consists of the following:	---------
	CAPACITORS	
C012	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C013	ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C014	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C015	ELECTROLYTIC CAP. 1000µF/16V M	CE1CMASDL102
C017	ELECTROLYTIC CAP. 4700µF/6.3V SL	CE0KMZADL472
C018	CERAMIC CAP. B K 220pF/500V	CCD2JKP0B221
C019	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASDL102
C021	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASDL471
C023	CERAMIC CAP. B K 470pF/500V	CCD2JKP0B471
C024	ELECTROLYTIC CAP. 22µF/50V M	CE1JMASDL220
C027	ELECTROLYTIC CAP. 3300µF/6.3V SL	CE0KMZADL332
C028	ELECTROLYTIC CAP. 2200µF/6.3V M	CE0KMASDL222
C030	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C031	CHIP CERAMIC CAP.(1608) B K 0.033µF/50V	CHD1JK30B333
C032	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C033	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C1001⚠	ACROSS THE LINE CAP. 0.068µF/250V	CT2E683DC016
C1003	CERAMIC CAP. B K 0.01µF/500V	CCD2JKP0B103
C1004	ELECTROLYTIC CAPACITOR ZR200TA221K18EB	CA2D221DYG04
C1005	CERAMIC CAP. B K 470pF/500V	CCD2JKP0B471

Ref. No.	Description	Part No.
C1006⚠	SAFETY CAP. 3300pF/250V	CCD2EMA0E332
C1013	CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C1029	CERAMIC CAP.(AX) X K 2200pF/16V	CCA1CKT0X222
C1032	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1033	CERAMIC CAP. YV Z 0.022µF/50V	CCD1JZSYV223
C1034	ELECTROLYTIC CAP. 3300µF/6.3V SL	CE0KMZADL332
C1035	CERAMIC CAP. B K 470pF/500V	CCD2JKP0B471
DIODES		
D012	SCHOTTKY BARRIER DIODE SB390	NDQZ000SB390
D013	RECTIFIER DIODE BA158	NDQZ000BA158
D014	SCHOTTKY BARRIER DIODE SB190	NDQZ000SB190
D016	SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
D017	ZENER DIODE MTZJT-7715C	QDTC00MTZJ15
D018	RECTIFIER DIODE BA158	NDQZ000BA158
D020	PCB JUMPER D0.6-P5.0	JW5.0T
D021	SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
D022	SCHOTTKY BARRIER DIODE SB240-B/P	NDQZ000SB240
D023	SCHOTTKY BARRIER DIODE SB140	NDQZ000SB140
D024	ZENER DIODE MTZJT-7718C	QDTC00MTZJ18
D025	ZENER DIODE MTZJT-776.8B	QDTB0MTZJ6R8
D1001	DIODE 1N5397-B	NDLZ001N5397
D1002	DIODE 1N5397-B	NDLZ001N5397
D1003	DIODE 1N5397-B	NDLZ001N5397
D1004	DIODE 1N5397-B	NDLZ001N5397
D1006	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1007	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
D1011	RECTIFIER DIODE BA158	NDQZ000BA158
D1012	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1018	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1022	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1024	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1025	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1026	PCB JUMPER D0.6-P5.0	JW5.0T
D1028	RECTIFIER DIODE BA158	NDQZ000BA158
D2015	SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
IC		
IC010⚠	PHOTOCOUPLER PS2561A-1(W)	QPEWPS2561A1
COILS		
L010	POWER INDUCTORS CWKBNP-180K	LLF1800KV002
L012	POWER INDUCTORS CWKBNP-150K	LLF1500KV002
L013	RADIAL TYPE CHOKE COIL CW68-470K-841040NP	LLBD00PKV023
L1001⚠	COIL LINE FILTER ST0603FT20-009 0.027	LLEB0Z0Y2001
L1002	BEAD CORE B16 RH 3.5X10X1.3	XL03010XM001
TRANSISTORS		
Q031	TRANSISTOR KTA1267-Y-AT/P	NQSYKTA1267P
Q1001⚠	FET MOS 2SK3563(Q)	QFWZ2SK3563Q
Q1003	TRANSISTOR KTC3199-Y-AT/P	NQSYKTC3199P
Q1008	TRANSISTOR KTC3199-Y-AT/P	NQSYKTC3199P
RESISTORS		
R001⚠	GLASS GLAZE RES. 1/2W J 3.3M Ω	RXX2JZLZ0335
R015	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R016	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R017	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R018	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R019	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R020	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R021	CHIP RES. 1/10W F 2.4k Ω	RRXAFR5H2401
R022	CHIP RES. 1/10W F 5.6k Ω	RRXAFR5H0562
R023	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1004	METAL OXIDE FILM RES. 2W J 82k Ω	RN02823ZU001
R1005	CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R1006	CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R1008	CARBON RES. 1/6W G 680 Ω	RCX6GATZ0681
R1010	CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R1011	METAL OXIDE FILM RES. 2W J 0.68 Ω	RN02R68ZU001
R1029	CARBON RES. 1/6W J 150k Ω	RCX6JATZ0154
R1032	CARBON RES. 1/6W G 1.2k Ω	RCX6GATZ0122
R1034	CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R1036	CARBON RES. 1/6W J 100k Ω	RCX6JATZ0104
R1037	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1038	CARBON RES. 1/6W J 100k Ω	RCX6JATZ0104
R1039	CARBON RES. 1/6W J 470k Ω	RCX6JATZ0474
R1043	METAL OXIDE FILM RES. 2W J 1.8 Ω	RN021R8ZU001
R1044	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
MISCELLANEOUS		
2B18	HEATSINK V2600PZ	0VM409007C
2L019	SCREW S-TIGHT M3X8 BIND HEAD+	GBJS3080
AC1001⚠	AC CORD W/O A GND WIRE UL/CSA 1770 BLACK	WAC0172LW021
F1001⚠	FUSE CURRENT PEG20C0NG001	PEG20C0NG001
FH1001	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
FH1002	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
T001⚠	TRANS POWER 06762-S02	LTT2PC0KT013

JUNCTION CBA

Ref. No.	Description	Part No.
	JUNCTION CBA (PSV-B) Consists of the following:	---------
CONNECTOR		
CN1612	242 SERIES CONNECTOR TUC-P18X-B1 WHT ST	JCTUB18TG002
DIODE		
D2013	RECTIFIER DIODE RL201	NDQZ000RL201
MISCELLANEOUS		
W003	WIRE ASSEMBLY 9P 9PIN/AWG26#2651/P2.0	WX1E9A00-004
W004	WIRE ASSEMBLY 9P 9PIN/AWG26#2651/P2.0	WX1E9A00-004

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